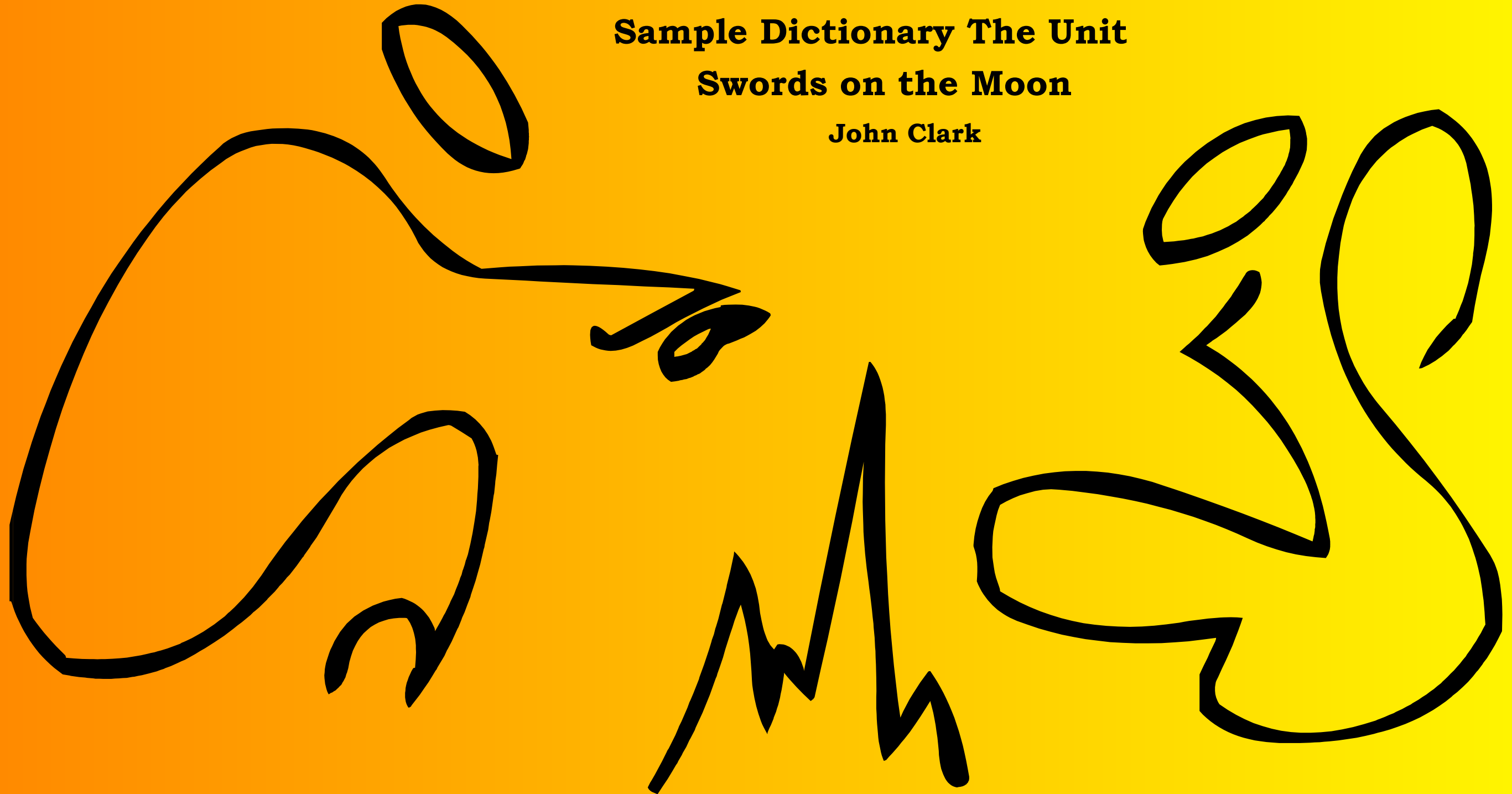


# Basic Analog Grammar

Sample Dictionary The Unit

Swords on the Moon

John Clark



John 312

**2SMT1R0**

$$\mathbf{N}_1 := 1.37658$$
$$\mathbf{A} := \frac{\mathbf{1}}{\mathbf{N}_1}$$
$$\mathbf{bN_1} := \sqrt{\mathbf{1} + \mathbf{N_1}^2} \quad \mathbf{bc} := \frac{1}{\mathbf{bN_1}}$$

$$\mathbf{cf} := \frac{\mathbf{bc}}{\mathbf{bN}_1} \quad \mathbf{bg} := \frac{\mathbf{bN}_1 \cdot \mathbf{bc}}{\mathbf{N}_1}$$

$$\mathbf{dg} := \mathbf{cf} \quad \mathbf{bd} := \sqrt{\mathbf{bg}^2 + \mathbf{dg}^2}$$

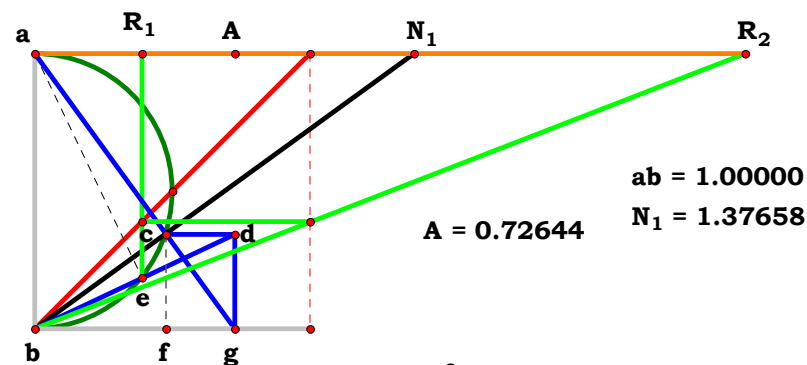
$$\mathbf{be} := \frac{\mathbf{dg}}{\mathbf{bd}} \quad \mathbf{R}_1 := \frac{\mathbf{bg} \cdot \mathbf{be}}{\mathbf{bd}}$$

$$\mathbf{R}_1 = 0.387819 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_1^3 + N_1}{N_1^4 + 3 \cdot N_1^2 + 1} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = \mathbf{0}$$

$$R_1 - \frac{A \cdot (A^2 + 1)}{A^4 + 3 \cdot A^2 + 1} = 0 \quad R_2 - \frac{A^4 + 3 \cdot A^2 + 1}{A \cdot (A^2 + 1)} = 0$$



$$R_1 - \frac{N_1^3 + N_1}{N_1^4 + 3 \cdot N_1^2 + 1} = 0.00000$$

$$R_1 - \frac{(A^3 + A)}{(A^4 + 3 \cdot A^2 + 1)} = 0.00000$$

$$\frac{(A^3+A)}{(A^4+3 \cdot A^2+1)} - \frac{N_1^3+N_1}{N_1^4+3 \cdot N_1^2+1} = 0.00000$$

$$R_1 = 0.38782$$

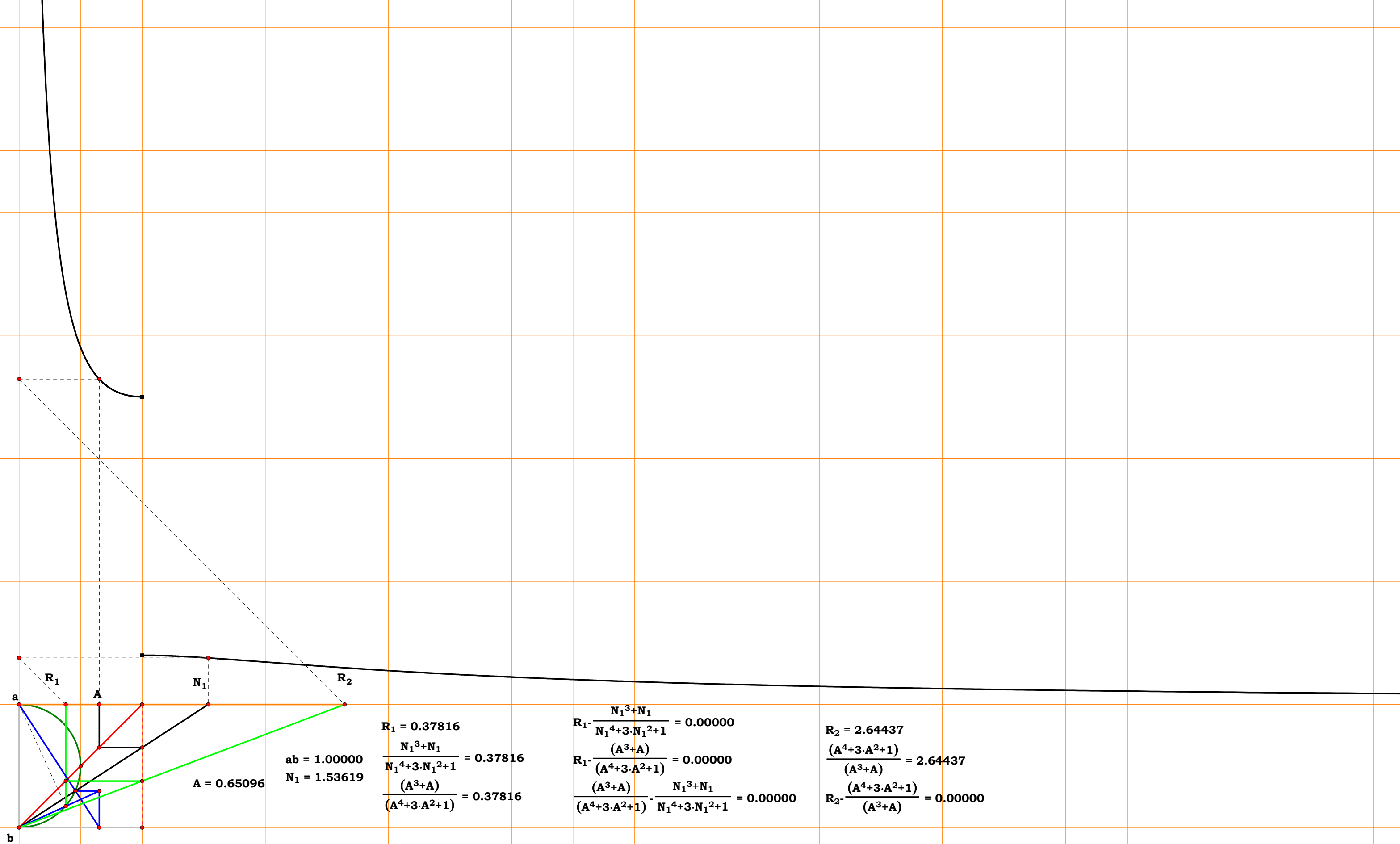
$$\frac{N_1^{3+N_1}}{N_1^{4+3.N_1^2+1}} = 0.38782$$

$$\frac{(A^3+A)}{(A^4+3.A^2+1)} = 0.38782$$

$$R_2 = 2.57853$$

$$\frac{(A^4+3 \cdot A^2+1)}{(A^3+A)} = 2.57853$$

$$R_2 - \frac{(A^4 + 3 \cdot A^2 + 1)}{(A^3 + A)} = 0.00000$$



$$ab = 1.00000$$

$$N_1 = 1.53619$$

$$A = 0.65096$$

$$R_1 = 0.37816$$

$$\frac{N_1^3 + N_1}{N_1^4 + 3 \cdot N_1^2 + 1} = 0.37816$$

$$\frac{(A^3 + A)}{(A^4 + 3 \cdot A^2 + 1)} = 0.37816$$

$$R_1 - \frac{N_1^3 + N_1}{N_1^4 + 3 \cdot N_1^2 + 1} = 0.00000$$

$$R_1 - \frac{(A^3 + A)}{(A^4 + 3 \cdot A^2 + 1)} = 0.00000$$

$$\frac{(A^3 + A)}{(A^4 + 3 \cdot A^2 + 1)} - \frac{N_1^3 + N_1}{N_1^4 + 3 \cdot N_1^2 + 1} = 0.00000$$

$$R_2 = 2.64437$$

$$\frac{(A^4 + 3 \cdot A^2 + 1)}{(A^3 + A)} = 2.64437$$

$$R_2 - \frac{(A^4 + 3 \cdot A^2 + 1)}{(A^3 + A)} = 0.00000$$

**Given.**

**Unit.**    **ab := 1**

**N<sub>1</sub> := 1.69966**

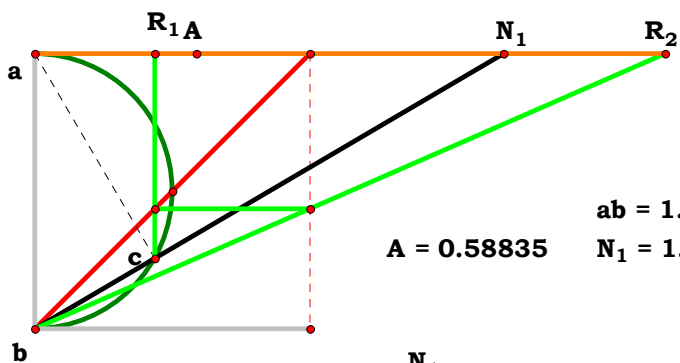
$$\mathbf{bc} := \frac{\mathbf{1}}{\left(\mathbf{N}_1^2 + \mathbf{1}\right)^{\frac{1}{2}}} \quad \mathbf{bn} := \sqrt{\mathbf{N}_1^2 + \mathbf{1}}$$

$$\mathbf{R}_1 := \frac{\mathbf{N}_1 \cdot \mathbf{bc}}{\mathbf{bn}} \quad \mathbf{R}_1 = 0.43706 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

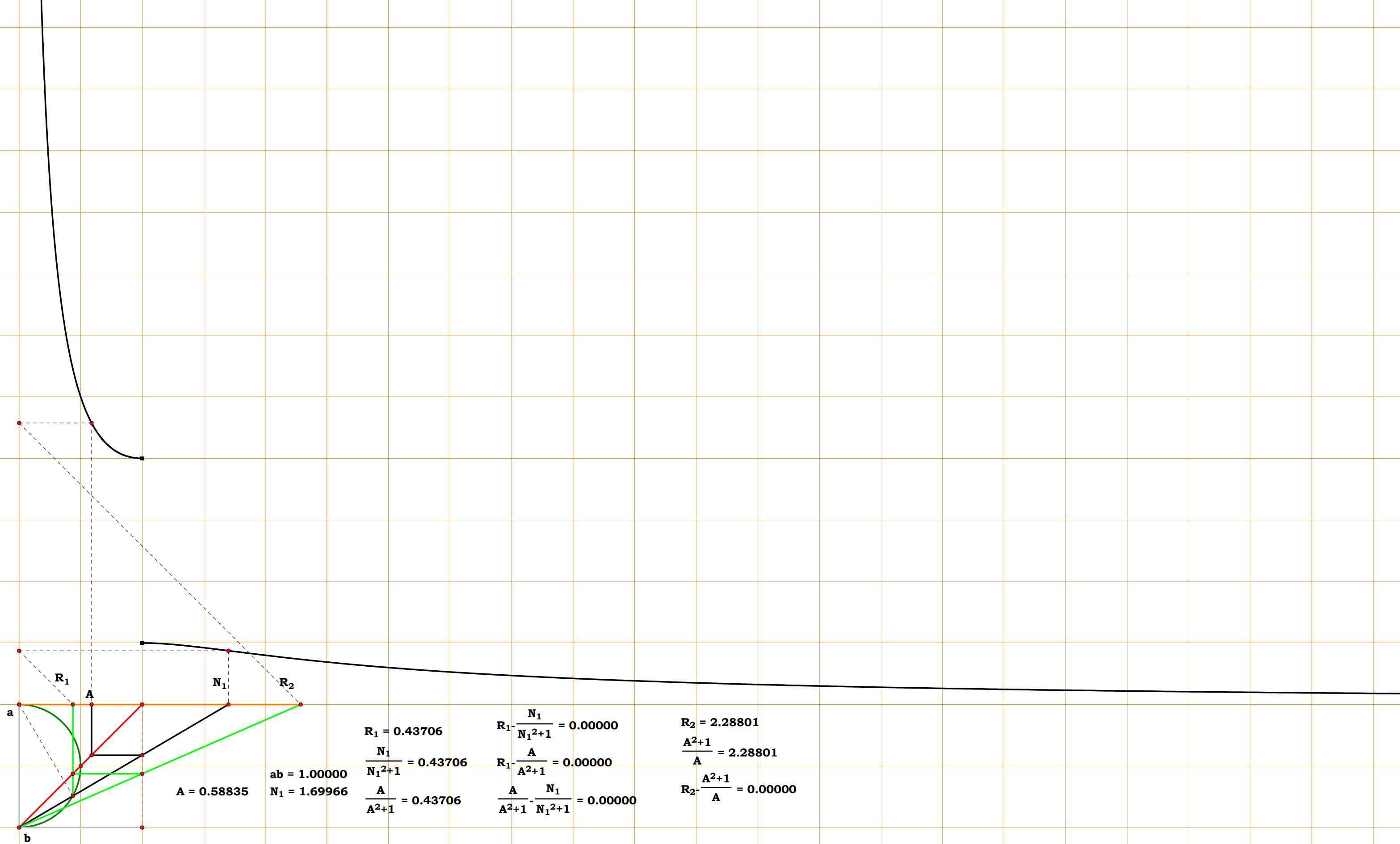
$$\mathbf{R}_1 - \frac{\mathbf{N}_1}{\mathbf{N}_1^2 + 1} = \mathbf{0}$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = \mathbf{0}$$

$$\mathbf{R}_1 - \frac{\mathbf{A}}{\mathbf{A}^2 + 1} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A}^2 + 1}{\mathbf{A}} = 0$$



$$\begin{array}{lcl}
 R_1 = 0.43706 & & \\
 \frac{N_1}{N_1^2+1} = 0.43706 & & \\
 \frac{A}{A^2+1} = 0.43706 & & \\
 \\
 A = 0.58835 & ab = 1.00000 & N_1 = 1.69966 \\
 \\
 R_1 - \frac{N_1}{N_1^2+1} = 0.00000 & & R_2 = 2.28801 \\
 R_1 - \frac{A}{A^2+1} = 0.00000 & & \frac{A^2+1}{A} = 2.28801 \\
 \frac{A}{A^2+1} - \frac{N_1}{N_1^2+1} = 0.00000 & & R_2 - \frac{A^2+1}{A} = 0.00000
 \end{array}$$



**2SMT1R2**

**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bc} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{cd} := \frac{\mathbf{bc}}{\mathbf{bN}_1}$$

$$\mathbf{ag} := \mathbf{N}_2 \cdot (1 - \mathbf{cd}) \qquad \mathbf{bg} := \sqrt{\mathbf{ag}^2 + 1}$$

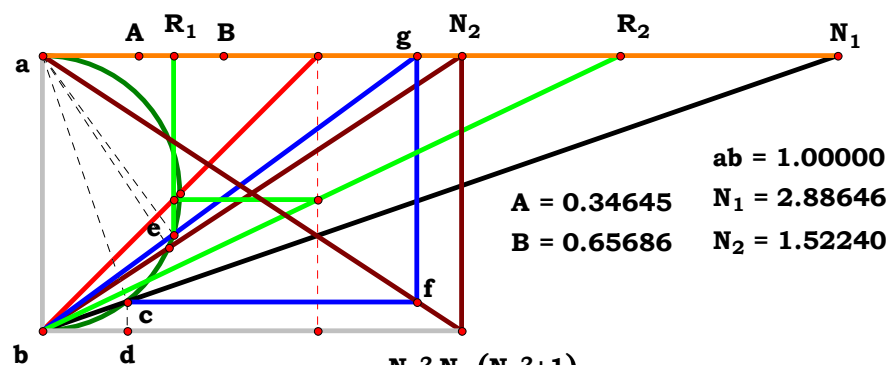
$$\mathbf{be} := \frac{1}{\mathbf{bg}} \quad \mathbf{R}_1 := \frac{\mathbf{ag} \cdot \mathbf{be}}{\mathbf{bg}}$$

$$\mathbf{R}_1 = 0.477338 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0$$

$$R_1 - \frac{B \cdot (A^2 + 1)}{A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1} = 0 \quad R_2 - \frac{A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1}{B \cdot (A^2 + 1)} = 0$$



$$R_1 - \frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.00000$$

$$R_1 - \frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} = 0.00000$$

$$\frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} - \frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.00000$$

$$R_1 = 0.47734$$

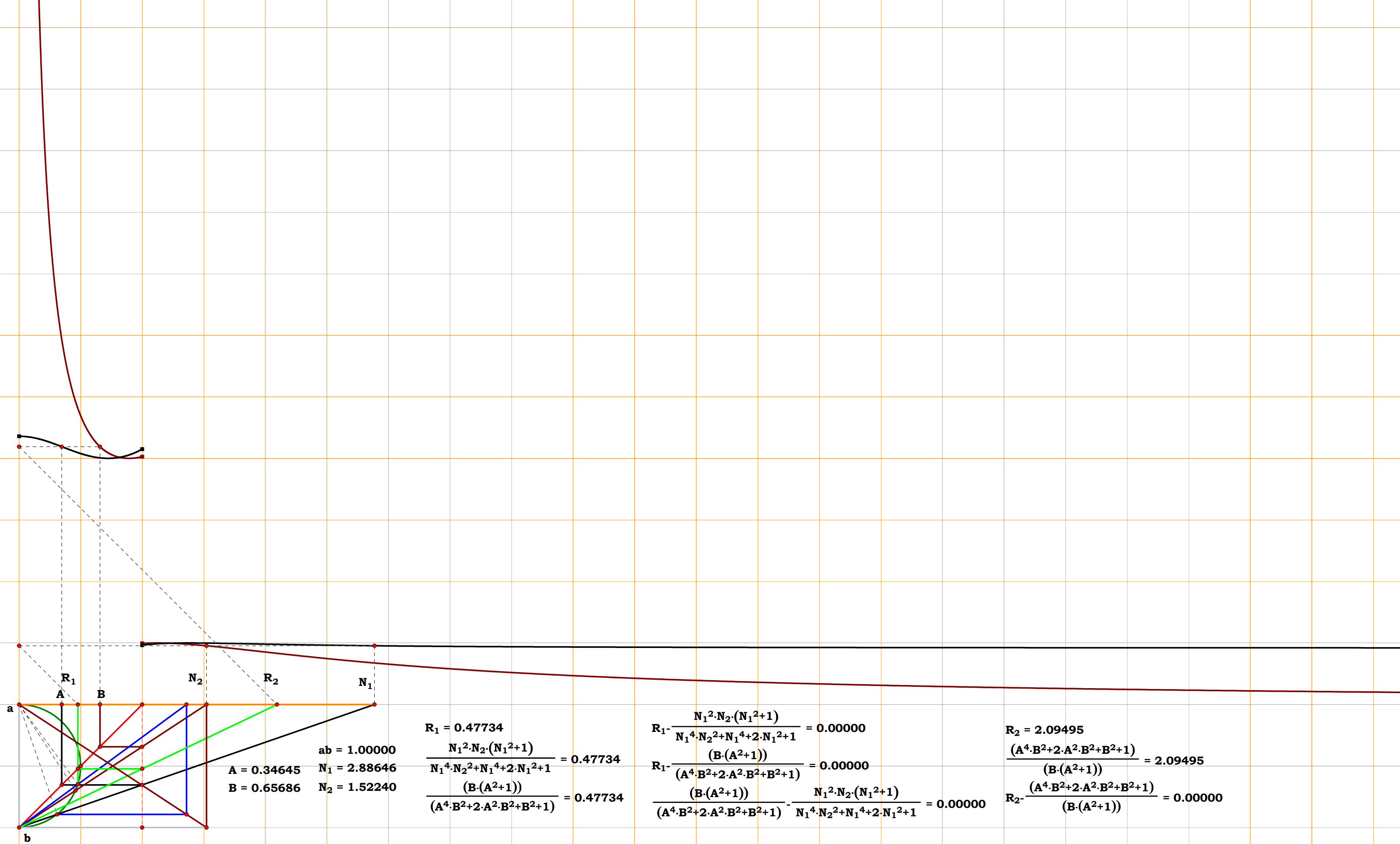
$$\frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.47734$$

$$\frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} = 0.47734$$

$$R_2 = 2.09495$$

$$\frac{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)}{(B \cdot (A^2 + 1))} = 2.09495$$

$$R_2 - \frac{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)}{(B \cdot (A^2 + 1))} = 0.00000$$



$ab = 1.00000$   
 $A = 0.34645$     $N_1 = 2.88646$   
 $B = 0.65686$     $N_2 = 1.52240$

$$R_1 = 0.47734$$

$$\frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.47734$$

$$\frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} = 0.47734$$

$$R_1 - \frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.00000$$

$$R_1 - \frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} = 0.00000$$

$$\frac{(B \cdot (A^2 + 1))}{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)} - \frac{N_1^2 \cdot N_2 \cdot (N_1^2 + 1)}{N_1^4 \cdot N_2^2 + N_1^4 + 2 \cdot N_1^2 + 1} = 0.00000$$

$$R_2 = 2.09495$$

$$\frac{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)}{(B \cdot (A^2 + 1))} = 2.09495$$

$$R_2 - \frac{(A^4 \cdot B^2 + 2 \cdot A^2 \cdot B^2 + B^2 + 1)}{(B \cdot (A^2 + 1))} = 0.00000$$



Given.

Unit.  $ab := 1$

$N_1 := 1.49594$

$A := \frac{1}{N_1}$

Descriptions.

$$ac := \frac{1}{\left(N_1^2 + 1\right)^{\frac{1}{2}}} \quad ad := \sqrt{N_1^2 + 1}$$

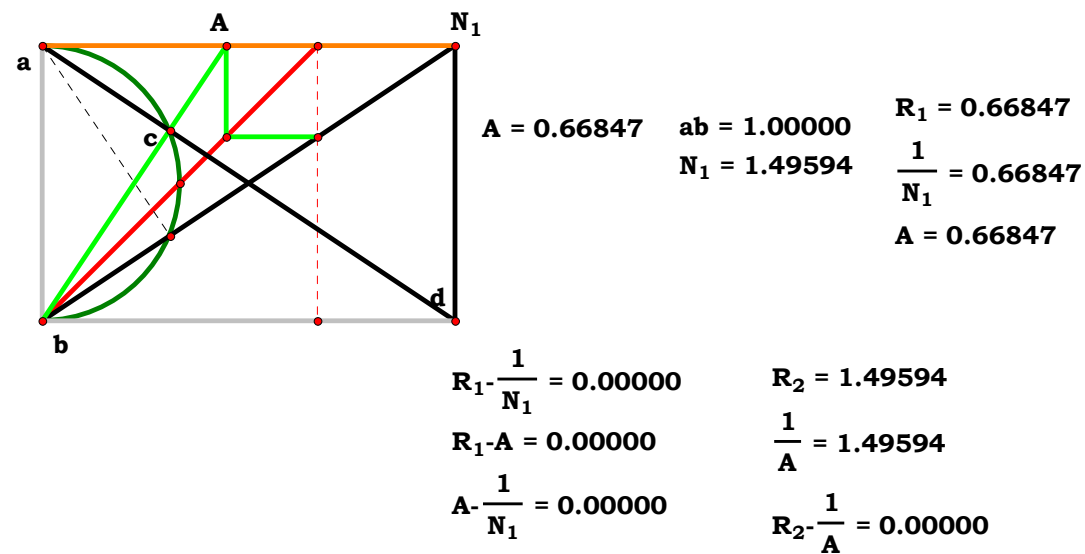
$$R_1 := \frac{ad \cdot ac}{N_1} \quad R_1 = 0.668476 \quad R_2 := \frac{1}{R_1}$$

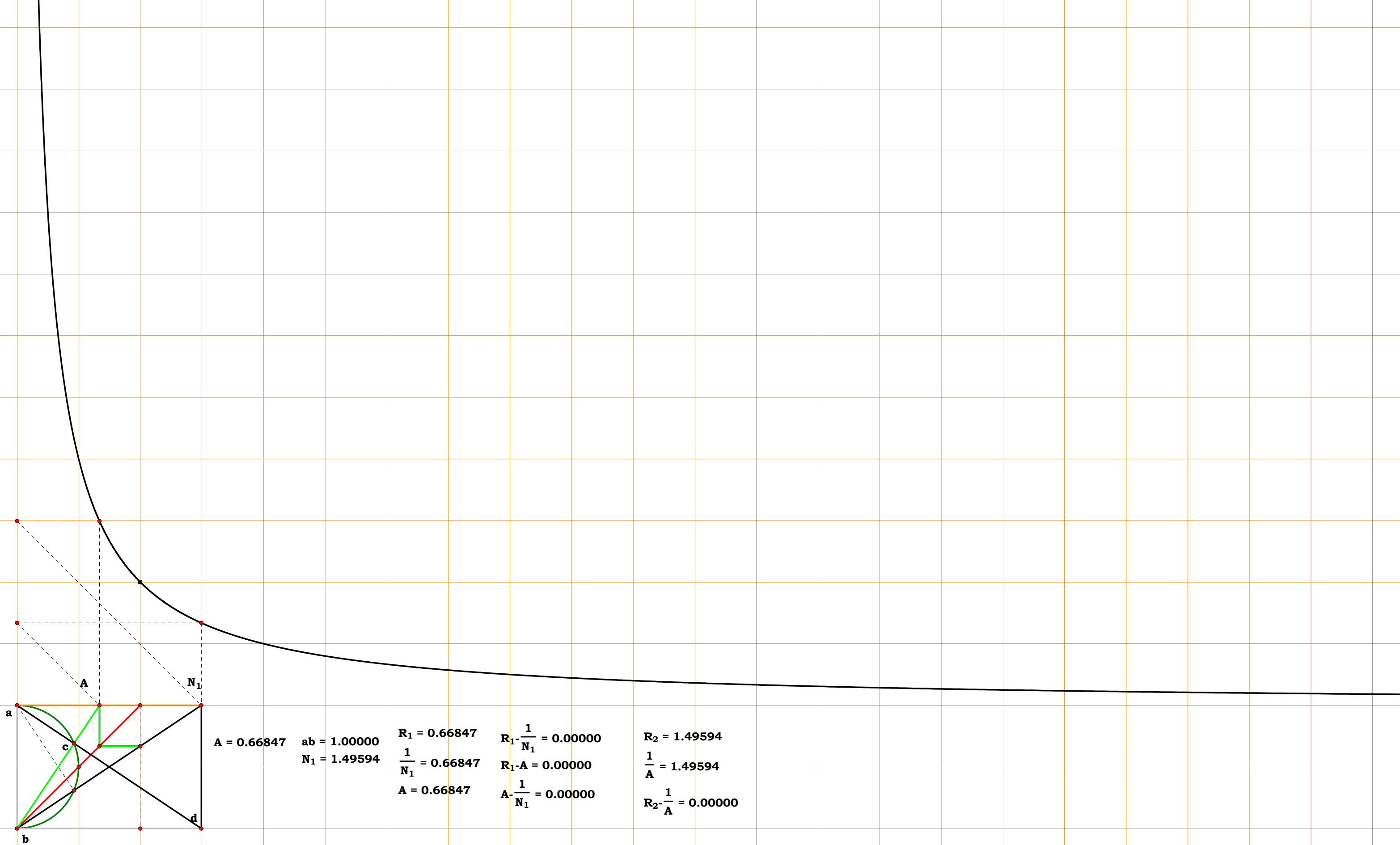
Definitions.

$$R_1 - \frac{1}{N_1} = 0$$

$$N_1 - \frac{1}{A} = 0$$

$$R_1 - A = 0 \quad R_2 - \frac{1}{A} = 0$$







2SMT1R4

Given.

Unit.  $ab := 1$

$N_1 := 1.22394$     $N_2 := 1.78106$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$

Descriptions.

$bf := \frac{1}{N_1}$     $ef := \frac{bf}{N_2}$     $R_1 := \frac{bf}{1 - ef}$

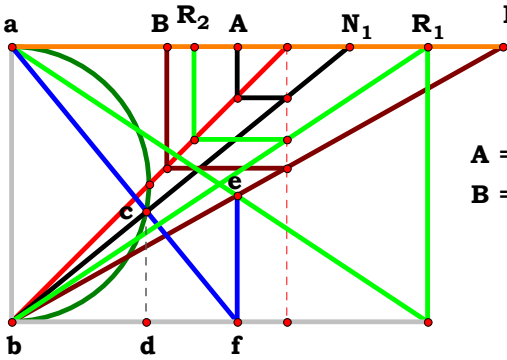
$R_1 = 1.509487$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_2}{N_1 \cdot N_2 - 1} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{A}{1 - A \cdot B} = 0 \quad R_2 - \frac{1 - A \cdot B}{A} = 0$$



$ab = 1.00000$   
 $A = 0.81704$     $N_1 = 1.22394$   
 $B = 0.56146$     $N_2 = 1.78106$

$$R_1 - \frac{N_2}{N_1 \cdot N_2 - 1} = 0.00000$$

$$R_1 - \frac{A}{1 - A \cdot B} = 0.00000$$

$$\frac{A}{1 - A \cdot B} - \frac{N_2}{N_1 \cdot N_2 - 1} = 0.00000$$

$$R_1 = 1.50950$$

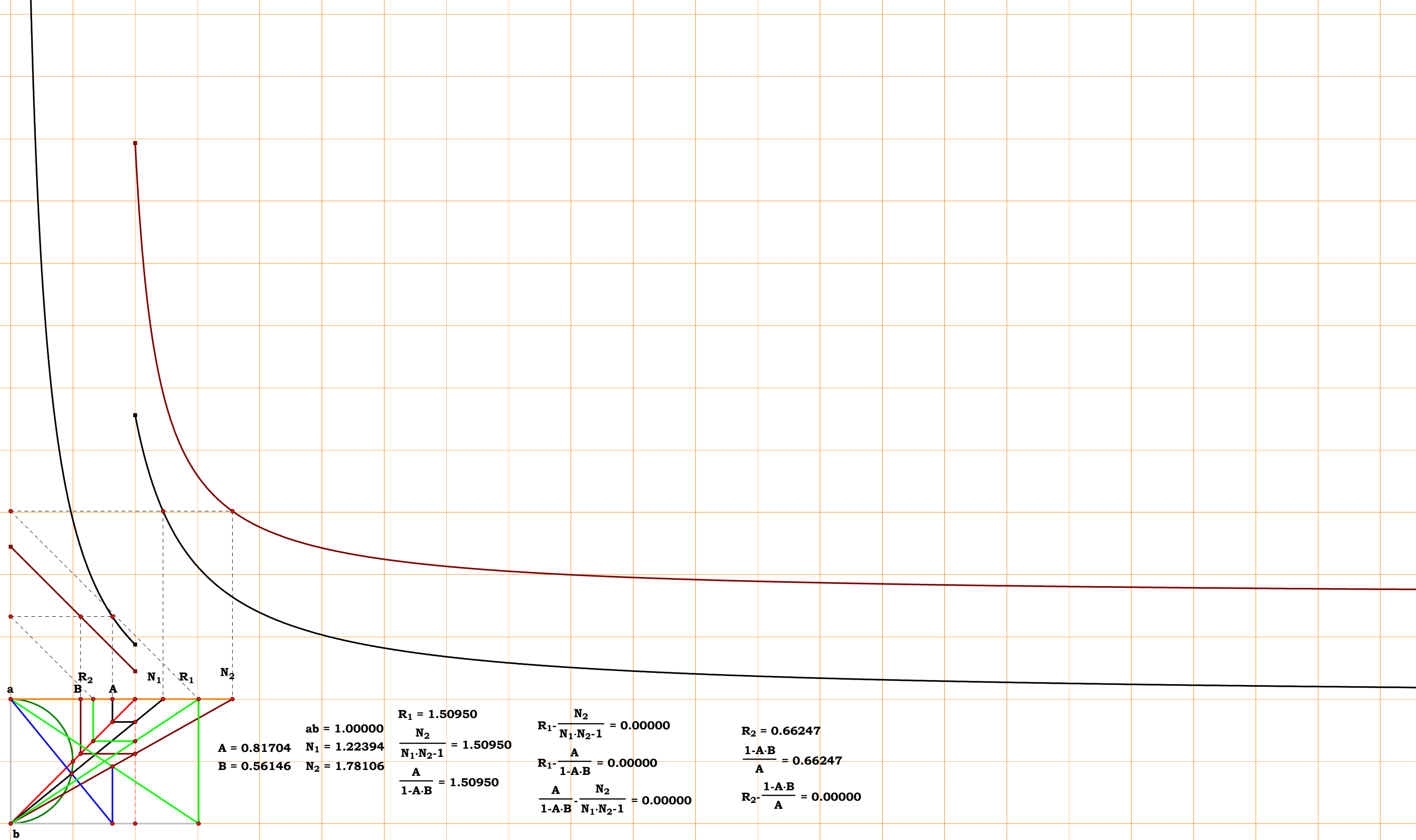
$$\frac{N_2}{N_1 \cdot N_2 - 1} = 1.50950$$

$$\frac{A}{1 - A \cdot B} = 1.50950$$

$$R_2 = 0.66247$$

$$\frac{1 - A \cdot B}{A} = 0.66247$$

$$R_2 - \frac{1 - A \cdot B}{A} = 0.00000$$



$ab = 1.00000$   
 $A = 0.81704$     $N_1 = 1.22394$   
 $B = 0.56146$     $N_2 = 1.78106$

$$R_1 = 1.50950$$

$$\frac{N_2}{N_1 \cdot N_2 - 1} = 1.50950$$

$$\frac{A}{1 - A \cdot B} = 1.50950$$

$$R_1 - \frac{N_2}{N_1 \cdot N_2 - 1} = 0.00000$$

$$R_1 - \frac{A}{1 - A \cdot B} = 0.00000$$

$$\frac{A}{1 - A \cdot B} - \frac{N_2}{N_1 \cdot N_2 - 1} = 0.00000$$

$$R_2 = 0.66247$$

$$\frac{1 - A \cdot B}{A} = 0.66247$$

$$R_2 - \frac{1 - A \cdot B}{A} = 0.00000$$

**2SMT1R5**

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2}$$
$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{cN}_1 := \frac{\mathbf{N}_1^2}{\mathbf{bN}_1}$$

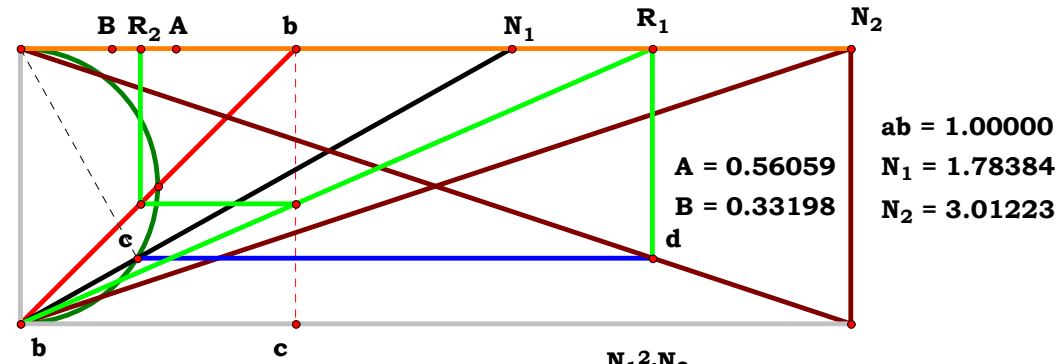
$$\mathbf{dR}_1 := \frac{\mathbf{cN}_1}{\mathbf{bN}_1} \quad \mathbf{R}_1 := \mathbf{N}_2 \cdot \mathbf{dR}_1$$

$$\mathbf{R}_1 = 2.29196 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_1^2 \cdot N_2}{N_1^2 + 1} = 0$$

$$\mathbf{N}_1 - \frac{1}{A} = 0 \quad \mathbf{N}_2 - \frac{1}{B} = 0$$

$$\mathbf{R}_1 - \frac{1}{\mathbf{B} \cdot (\mathbf{A}^2 + 1)} = 0 \quad \mathbf{R}_2 - \mathbf{B} \cdot (\mathbf{A}^2 + 1) = 0$$



$$R_1 - \frac{N_1^2 \cdot N_2}{N_1^2 + 1} = 0.00000$$

$$R_1 - \frac{1}{(B \cdot (A^2 + 1))} = 0.00000$$

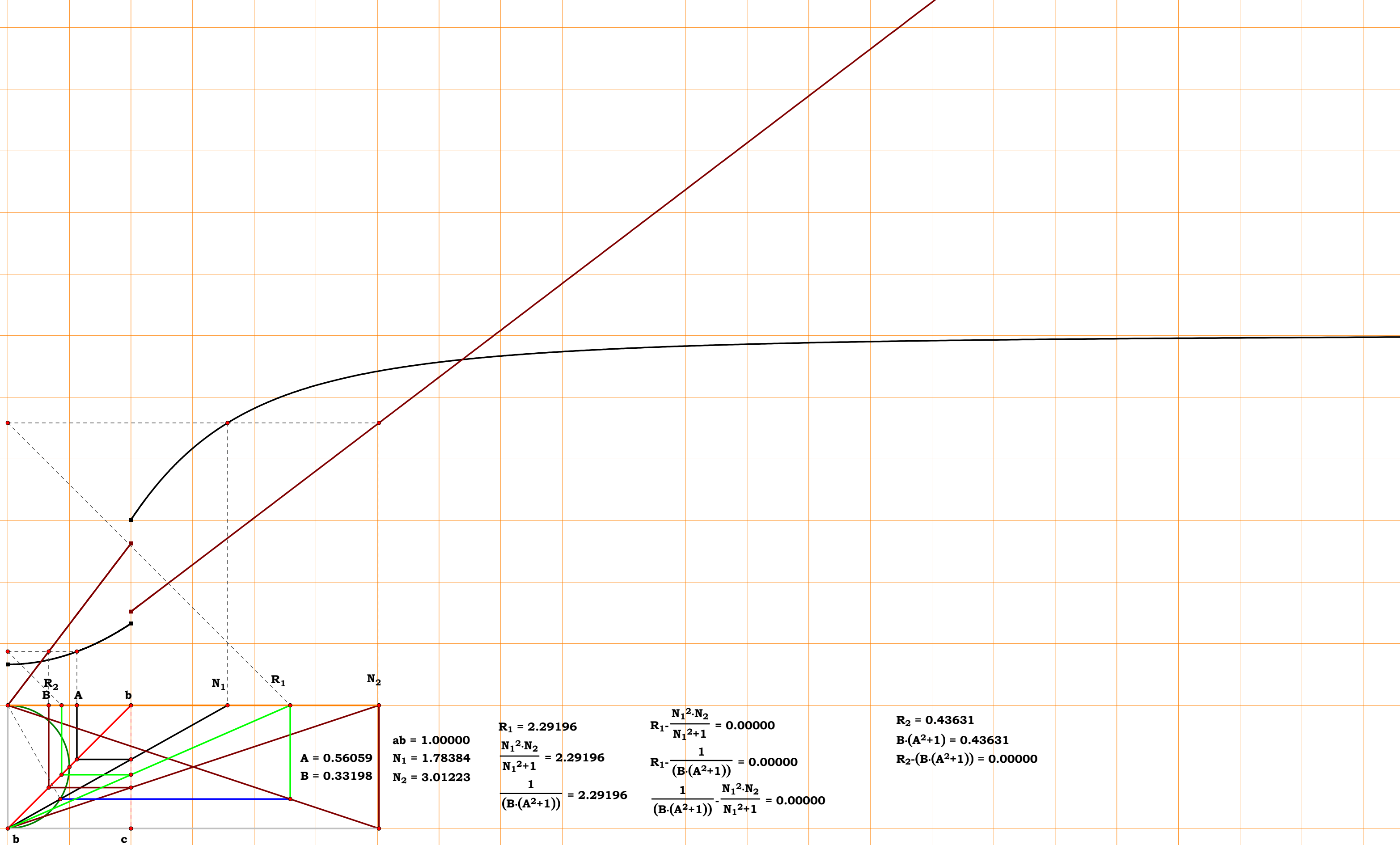
$$\frac{1}{(B \cdot (A^2 + 1))} - \frac{N_1^2 \cdot N_2}{N_1^2 + 1} = 0.00000$$

$$\frac{N_1^2 \cdot N_2}{N_1^2 + 1} = 2.29196$$

$$\frac{1}{(B \cdot (A^2 + 1))} = 2.29196$$

$$B \cdot (A^2 + 1) = 0.43631$$

$$R_2-(B \cdot (A^2+1)) = 0.00000$$



**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{A} := \frac{\mathbf{1}}{N_1}$$
$$\mathbf{df} := \frac{1}{1 + \mathbf{N}_1^2} \quad \mathbf{ce} := \mathbf{df} \quad \mathbf{be} := \frac{1}{\mathbf{N}_1}$$

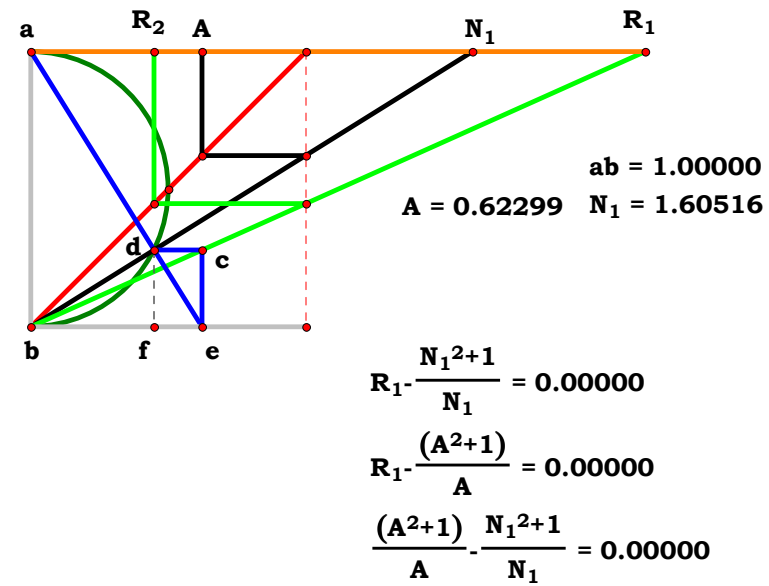
$$\mathbf{R}_1 := \frac{\mathbf{be}}{\mathbf{ce}} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$\mathbf{R}_1 = 2.228151$$

$$R_1 - \frac{N_1^2 + 1}{N_1} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = \mathbf{0}$$

$$R_1 - \frac{A^2 + 1}{A} = 0 \quad R_2 - \frac{A}{A^2 + 1} = 0$$



$$R_1 = 2.22815$$

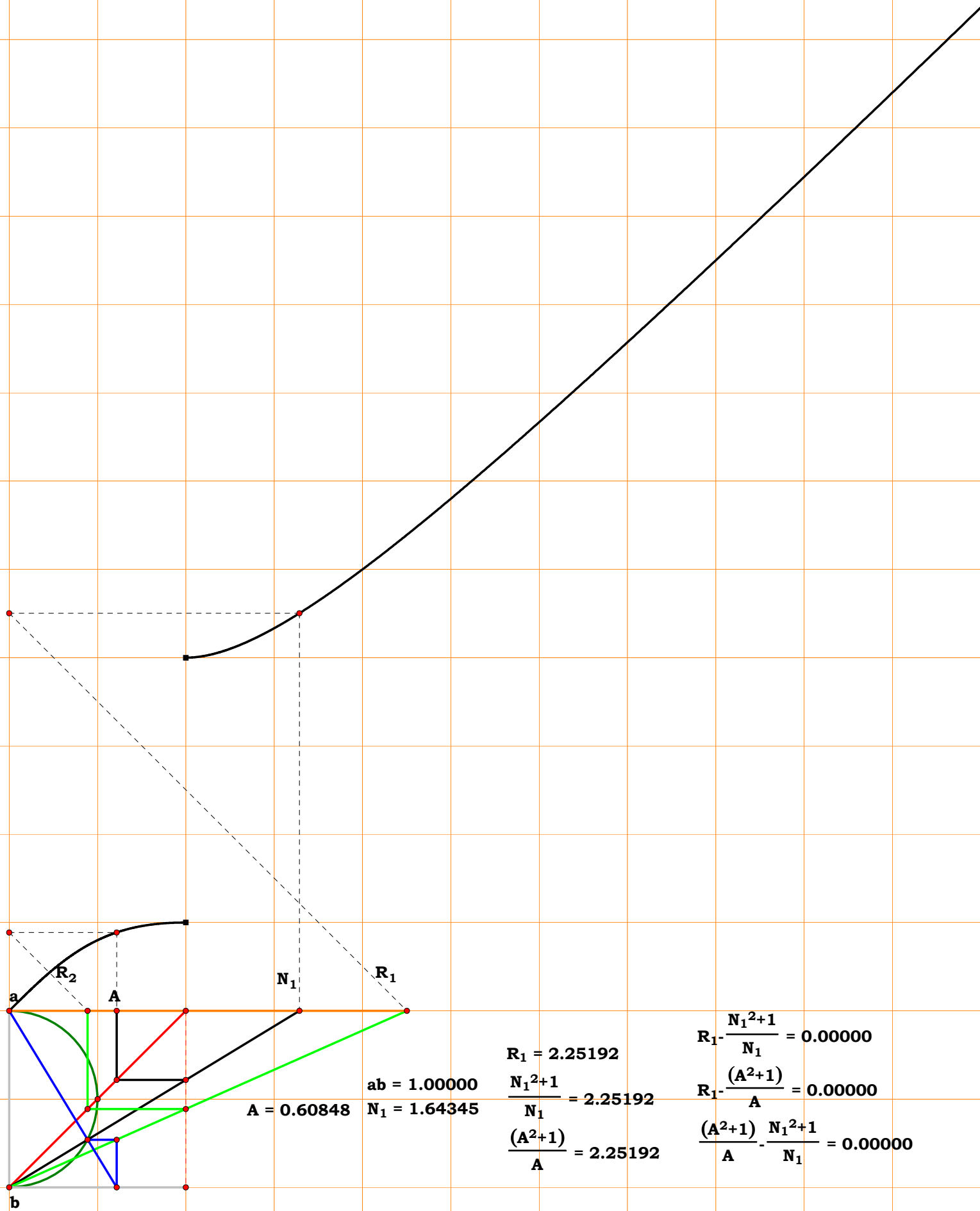
$$\frac{N_1^{2+1}}{N_1} = 2.22815$$

$$\frac{(A^2+1)}{A} = 2.22815$$

$$R_2 = 0.44880$$

$$\frac{A}{(A^2+1)} = 0.44880$$

$$R_2 - \frac{A}{(A^2+1)} = 0.00000$$



$$ab = 1.00000$$

$$N_1 = 1.64345$$

$$A = 0.60848$$

$$R_1 = 2.25192$$

$$\frac{N_1^{2+1}}{N_1} = 2.25192$$

$$\frac{(A^2+1)}{A} = 2.25192$$

$$R_1 - \frac{N_1^{2+1}}{N_1} = 0.00000$$

$$R_1 - \frac{(A^2+1)}{A} = 0.00000$$

$$\frac{(A^2+1)}{A} - \frac{N_1^{2+1}}{N_1} = 0.00000$$

$$R_2 = 0.44406$$

$$\frac{A}{(A^2+1)} = 0.44406$$

$$R_2 - \frac{A}{(A^2+1)} = 0.00000$$



Given.

Unit.  $ab := 1$

$N_1 := 1.46605$     $N_2 := 3.84139$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$

Descriptions.

$bd := \frac{1}{N_1}$     $de := \frac{bd}{N_2}$

$bf := \frac{bd}{(1 - de)}$     $bN_1 := \sqrt{N_1^2 + 1}$

$bc := \frac{1}{bN_1}$     $fg := \frac{bc}{bN_1}$     $R_1 := \frac{bf}{fg}$

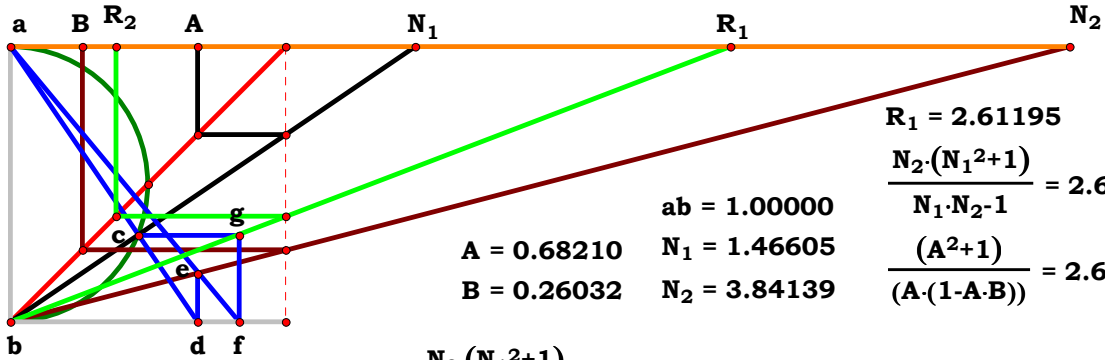
$R_1 = 2.611952$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} = 0$$

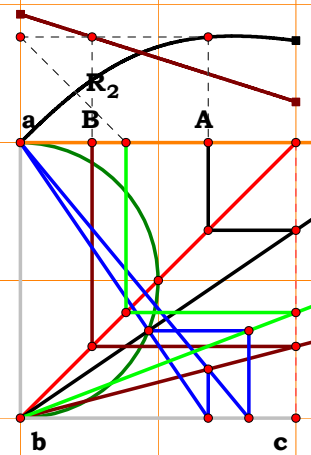
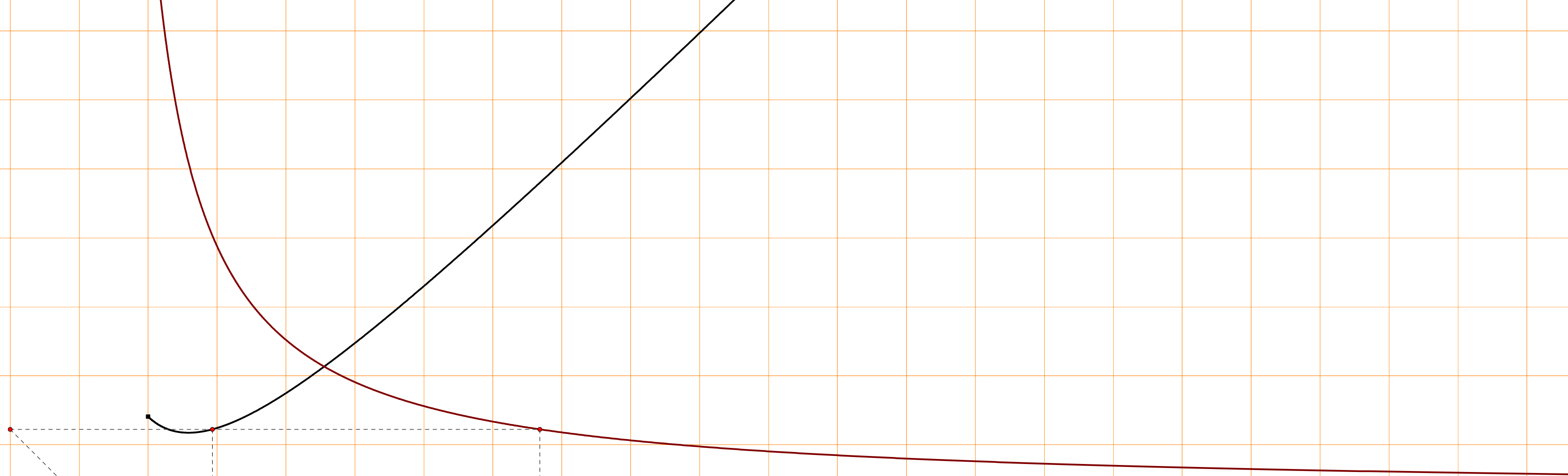
$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{(A^2 + 1)}{A \cdot (1 - A \cdot B)} = 0 \quad R_2 - \frac{A}{B} = -2.237376$$



$$\begin{aligned} ab &= 1.00000 \\ A &= 0.68210 & N_1 &= 1.46605 \\ B &= 0.26032 & N_2 &= 3.84139 \\ R_1 - \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 0.00000 \\ R_1 - \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} &= 0.00000 \\ \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} - \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 0.00000 \end{aligned}$$

$$\begin{aligned} R_1 &= 2.61195 \\ \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 2.61195 \\ \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} &= 2.61195 \\ R_2 &= 0.38286 \\ \frac{(A \cdot (1 - A \cdot B))}{(A^2 + 1)} &= 0.38286 \\ R_2 - \frac{(A \cdot (1 - A \cdot B))}{(A^2 + 1)} &= 0.00000 \end{aligned}$$



**N<sub>1</sub>**

**R<sub>1</sub>**

**N<sub>2</sub>**

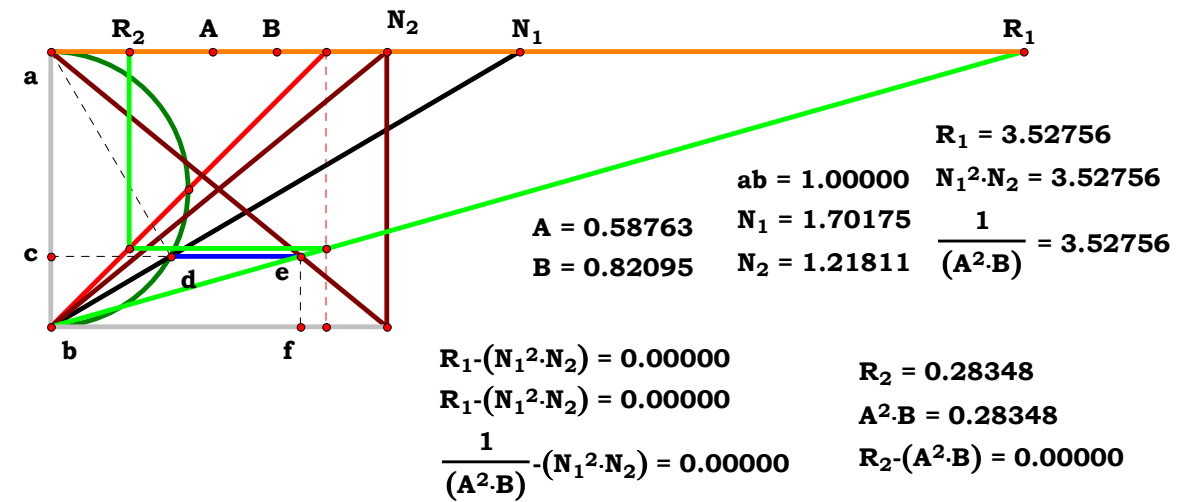
**A = 0.68210**  
**B = 0.26032**  
**ab = 1.00000**  
**N<sub>1</sub> = 1.46605**  
**N<sub>2</sub> = 3.84139**

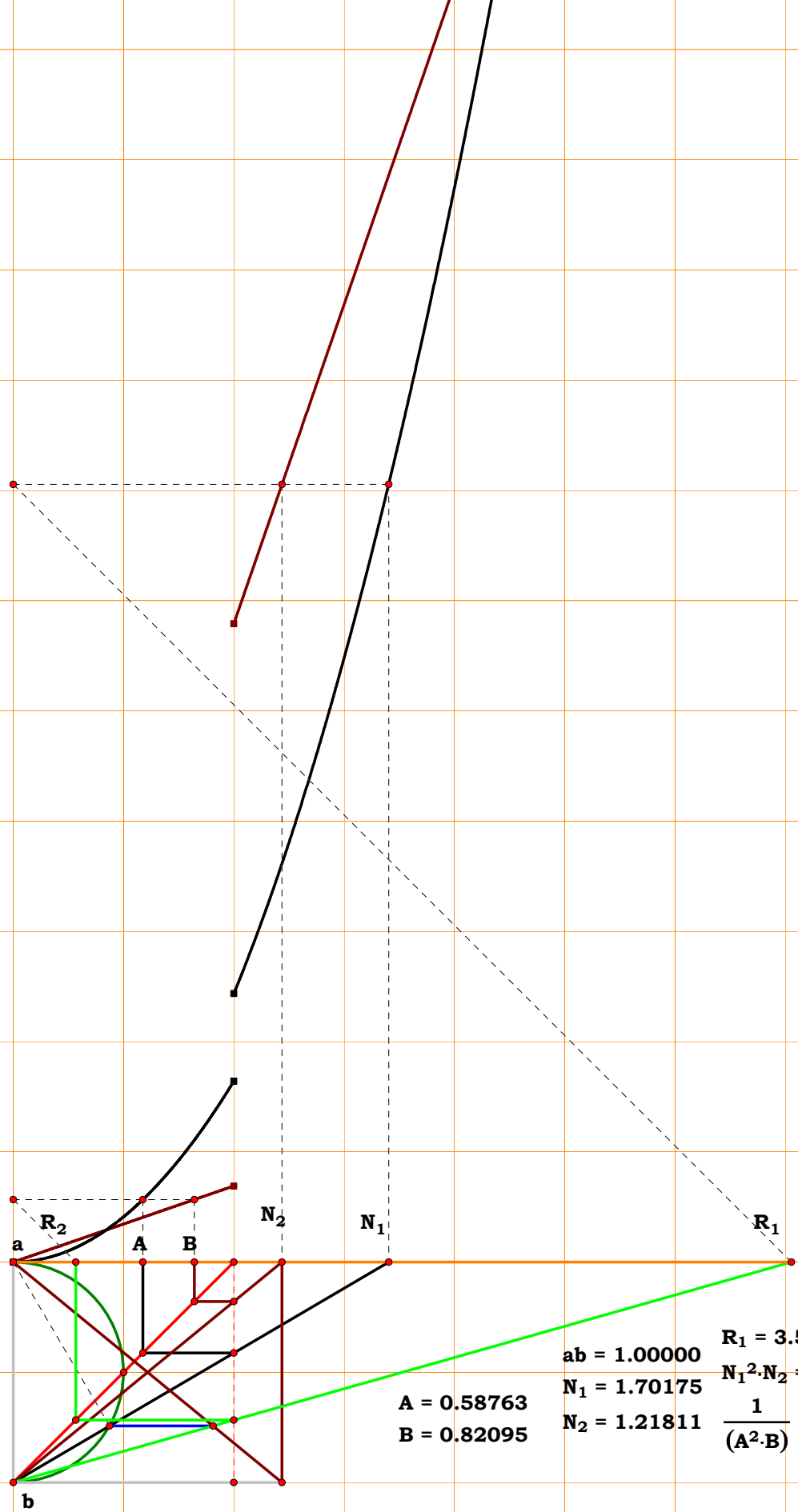
$$\begin{aligned}
 R_1 &= 2.61195 \\
 \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 2.61195 \\
 \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} &= 2.61195
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 0.00000 \\
 R_1 - \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} &= 0.00000 \\
 \frac{(A^2 + 1)}{(A \cdot (1 - A \cdot B))} - \frac{N_2 \cdot (N_1^2 + 1)}{N_1 \cdot N_2 - 1} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.38286 \\
 \frac{(A \cdot (1 - A \cdot B))}{(A^2 + 1)} &= 0.38286 \\
 R_2 - \frac{(A \cdot (1 - A \cdot B))}{(A^2 + 1)} &= 0.00000
 \end{aligned}$$

**2SMT1R8**

$$\mathbf{R}_1 - \frac{1}{\mathbf{A}^2 \cdot \mathbf{B}} = 0 \quad \mathbf{R}_2 - \mathbf{A}^2 \cdot \mathbf{B} = 0$$




**2SMT1R9**

**Unit.**  $\mathbf{ab} := 1$

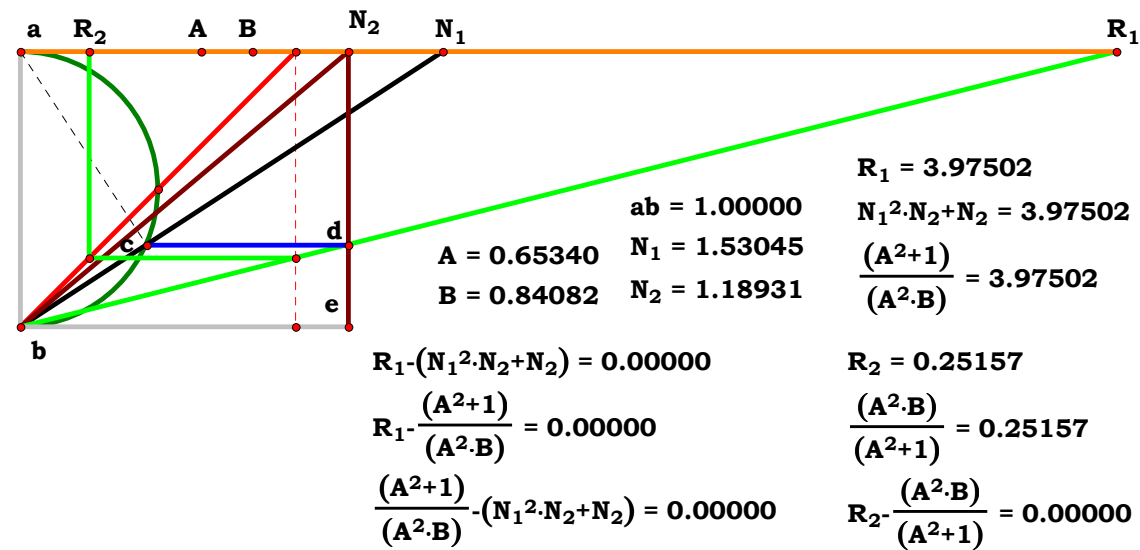
$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2}$$

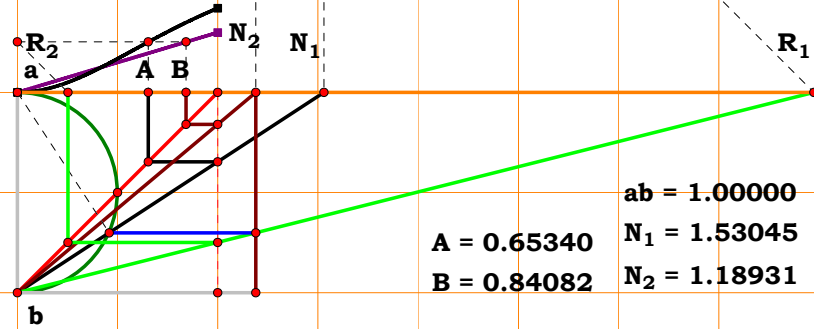
$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bc} := \frac{1}{\mathbf{bN}_1}$$

$$\mathbf{R}_1 = 3.975004 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$\mathbf{R}_1 - \mathbf{N}_2 \cdot (\mathbf{N}_1^2 + 1) = \mathbf{0}$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 + 1)}{\mathbf{A}^2 \cdot \mathbf{B}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A}^2 \cdot \mathbf{B}}{(\mathbf{A}^2 + 1)} = 0$$





$$R_1 - \frac{(A^2+1)}{(A^2 \cdot B)} = 0.00000$$

[illegible]

$$\frac{(A^2 \cdot B)}{(A^2 + 1)} = 0.25157$$

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**Given.** 2SMT1R10

$$\mathbf{N}_1 := 2.28196$$

$$\mathbf{A} := \frac{1}{N_1}$$

### Descriptions.

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{bf} := \frac{1}{2} \quad \mathbf{ce} := \mathbf{A}$$

$$\mathbf{ef} := \sqrt{\mathbf{bf}^2 - \mathbf{ce}^2}$$

$$\mathbf{bd} := \frac{1}{2} + \mathbf{ef} \quad \mathbf{R}_1 := \frac{\mathbf{A}}{\mathbf{bd}}$$

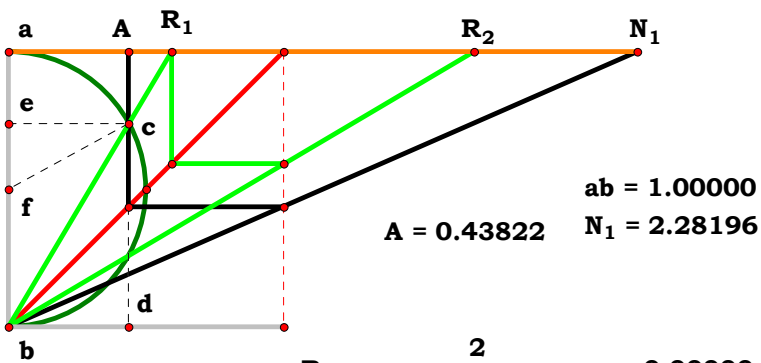
$$\mathbf{R}_1 = 0.591585 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

### Definitions.

$$\mathbf{R}_1 - \frac{2}{\mathbf{N}_1 + \sqrt{(\mathbf{N}_1 - 2) \cdot (\mathbf{N}_1 + 2)}} = \mathbf{0}$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = \mathbf{0}$$

$$R_1 - \frac{2 \cdot A}{\sqrt{1 - 4 \cdot A^2} + 1} = 0$$



$$R_1 - \frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.00000$$

$$R_1 - \frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2 + 1})} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2} + 1)} - \frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.00000$$

$$R_1 = 0.59159$$

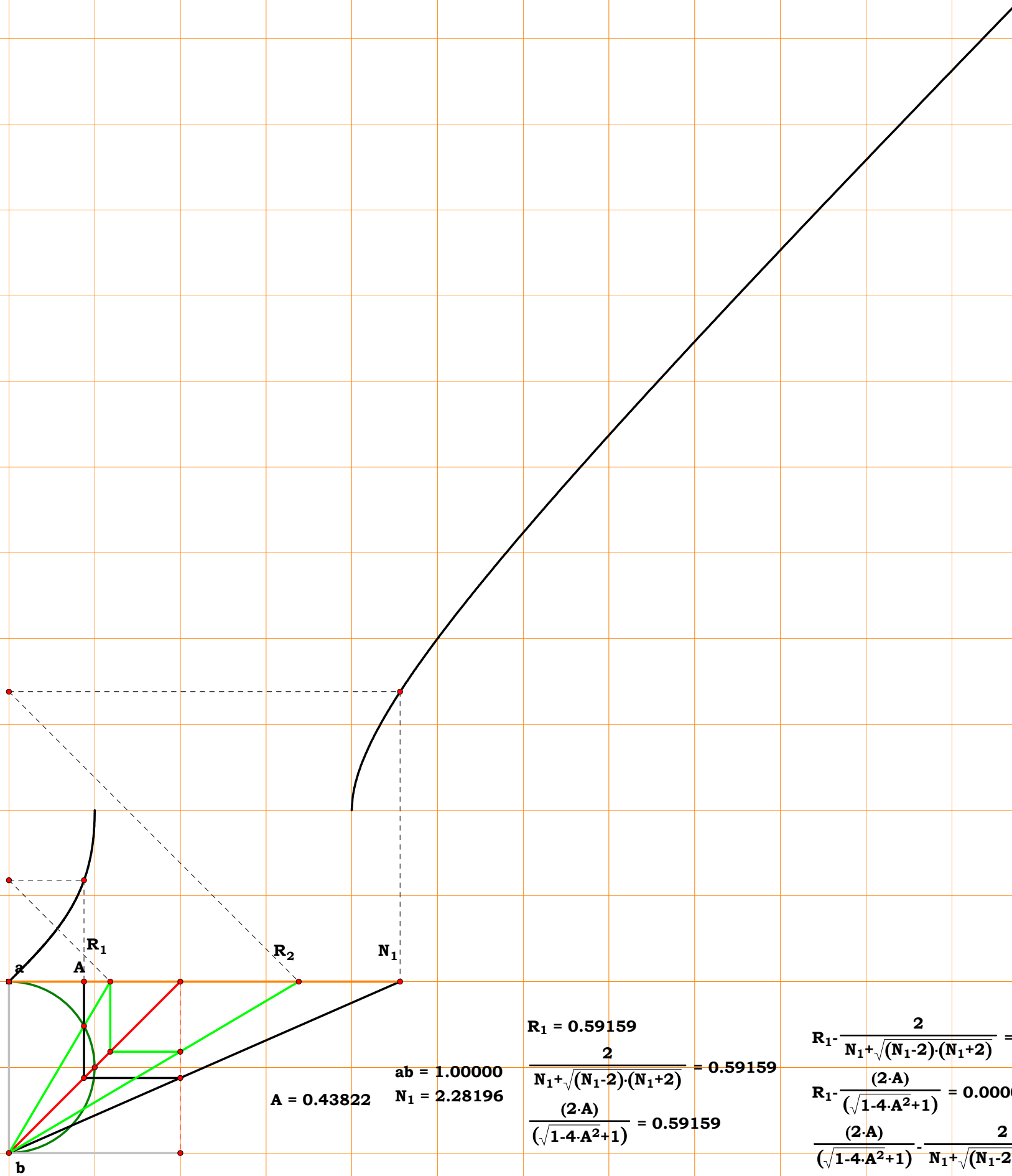
$$\frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.59159$$

$$\frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2} + 1)} = 0.59159$$

$$R_2 = 1.69037$$

$$\frac{(\sqrt{1-4 \cdot A^2}+1)}{(2 \cdot A)} = 1.69037$$

$$R_2 - \frac{(\sqrt{1-4 \cdot A^2} + 1)}{(2 \cdot A)} = 0.00000$$



$ab = 1.00000$   
 $A = 0.43822$      $N_1 = 2.28196$

$$R_1 = 0.59159$$

$$\frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.59159$$

$$\frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2 + 1})} = 0.59159$$

$$R_1 - \frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.00000$$

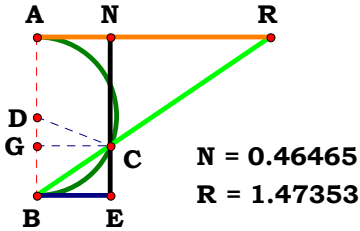
$$R_1 - \frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2 + 1})} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{1 - 4 \cdot A^2 + 1})} - \frac{2}{N_1 + \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 0.00000$$

$$R_2 = 1.69037$$

$$\frac{(\sqrt{1 - 4 \cdot A^2 + 1})}{(2 \cdot A)} = 1.69037$$

$$R_2 - \frac{(\sqrt{1 - 4 \cdot A^2 + 1})}{(2 \cdot A)} = 0.00000$$



Unit.  $AB := 1$     Given.     $N := .46465$

$$N_u := 3 \quad A := \frac{N_u}{N} \quad Z := 20 \quad q := \frac{Z}{N}$$

Descriptions.

$$DC := \frac{AB}{2} \quad CG := N$$

$$DG := \sqrt{DC^2 - CG^2}$$

$$CE := \frac{AB}{2} - DG \quad R := \frac{N \cdot AB}{CE}$$

$$R = 1.473502$$

Definitions.

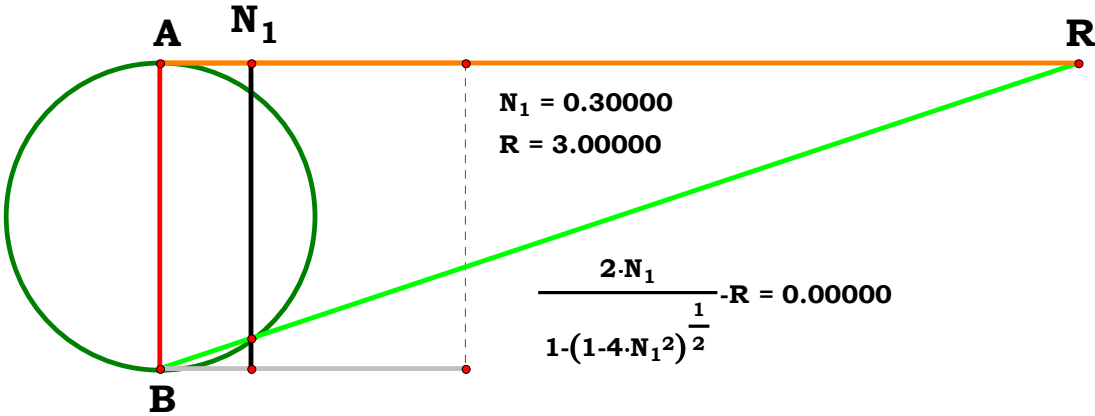
$$R - \frac{2N}{1 - \sqrt{1 - 4N^2}} = 0$$

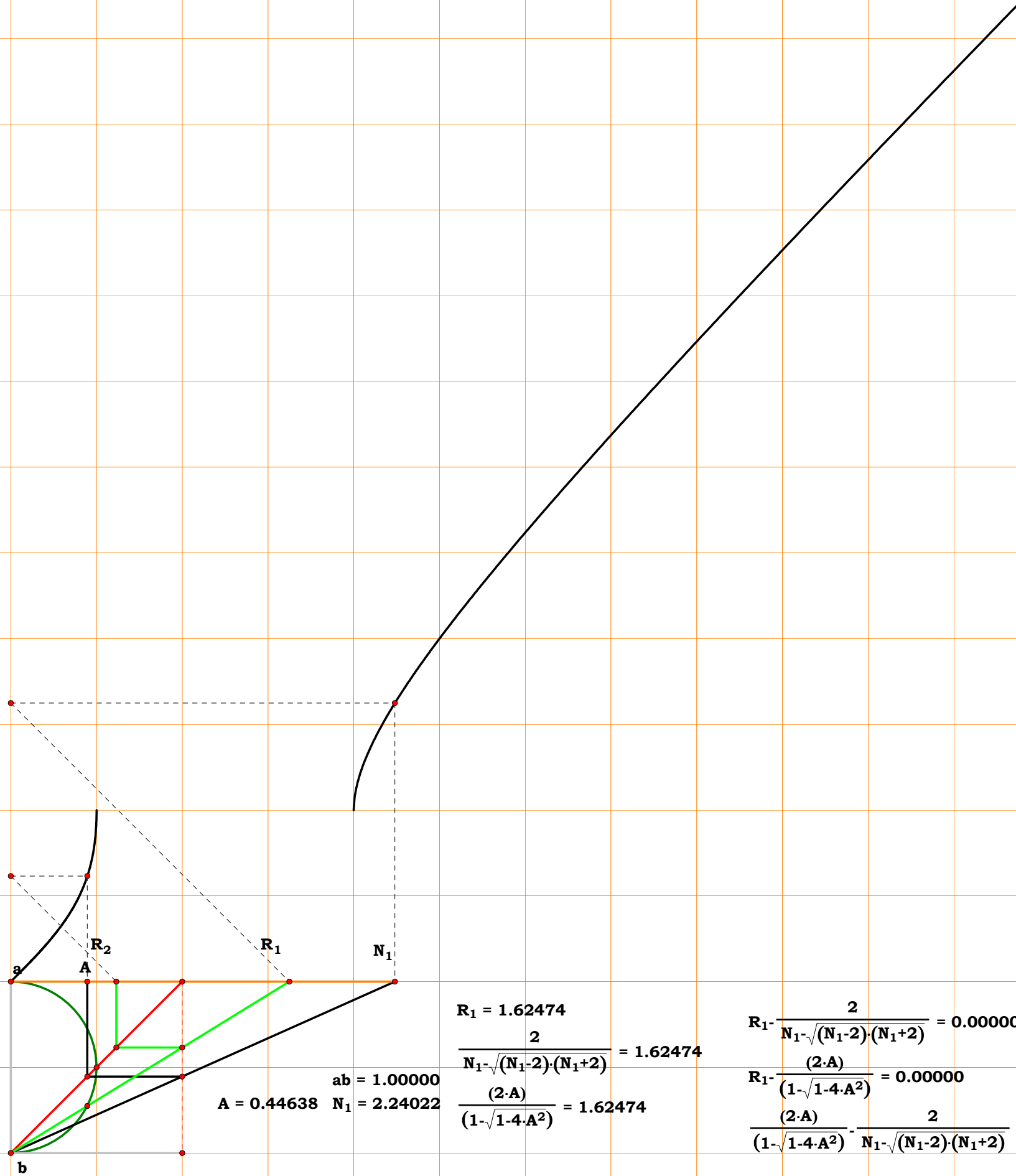
$$N - \frac{N_u}{A} = 0$$

$$R - \frac{2 \cdot N_u}{A - \sqrt{A^2 - 4 \cdot N_u^2}} = 0$$

$$N - \frac{Z}{q} = 0$$

$$R - \frac{2 \cdot Z}{q - \sqrt{q^2 - 4 \cdot Z^2}} = 0$$





$$\frac{\frac{R_1}{2}}{N_1 - \sqrt{(N_1 - 2) \cdot (N_1 + 2)}} = 1.62474$$

$$\frac{(2 \cdot A)}{(1 - \sqrt{1 - 4 \cdot A^2})} = 1.62474$$

$$\begin{aligned} R_1 \cdot \frac{2}{N_1 \cdot \sqrt{(N_1-2) \cdot (N_1+2)}} &= 0.00000 \\ R_1 \cdot \frac{(2 \cdot A)}{(1 - \sqrt{1 - 4 \cdot A^2})} &= 0.00000 \\ \frac{(2 \cdot A)}{(1 - \sqrt{1 - 4 \cdot A^2})} - \frac{2}{N_1 \cdot \sqrt{(N_1-2) \cdot (N_1+2)}} &= 0.00000 \end{aligned}$$

$$R_2 = \frac{(1 - \sqrt{1 - 4 \cdot A^2})}{(2 \cdot A)} = 0.61548$$

$$R_2 - \frac{(1 - \sqrt{1 - 4 \cdot A^2})}{(2 \cdot A)} = 0.00000$$

## 2SMT2R0

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2}$$
$$\mathbf{dN}_2 := 1 - \frac{\mathbf{N}_2}{\mathbf{N}_1} \quad \mathbf{ad} := \sqrt{\mathbf{N}_2^2 + \mathbf{dN}_2^2}$$

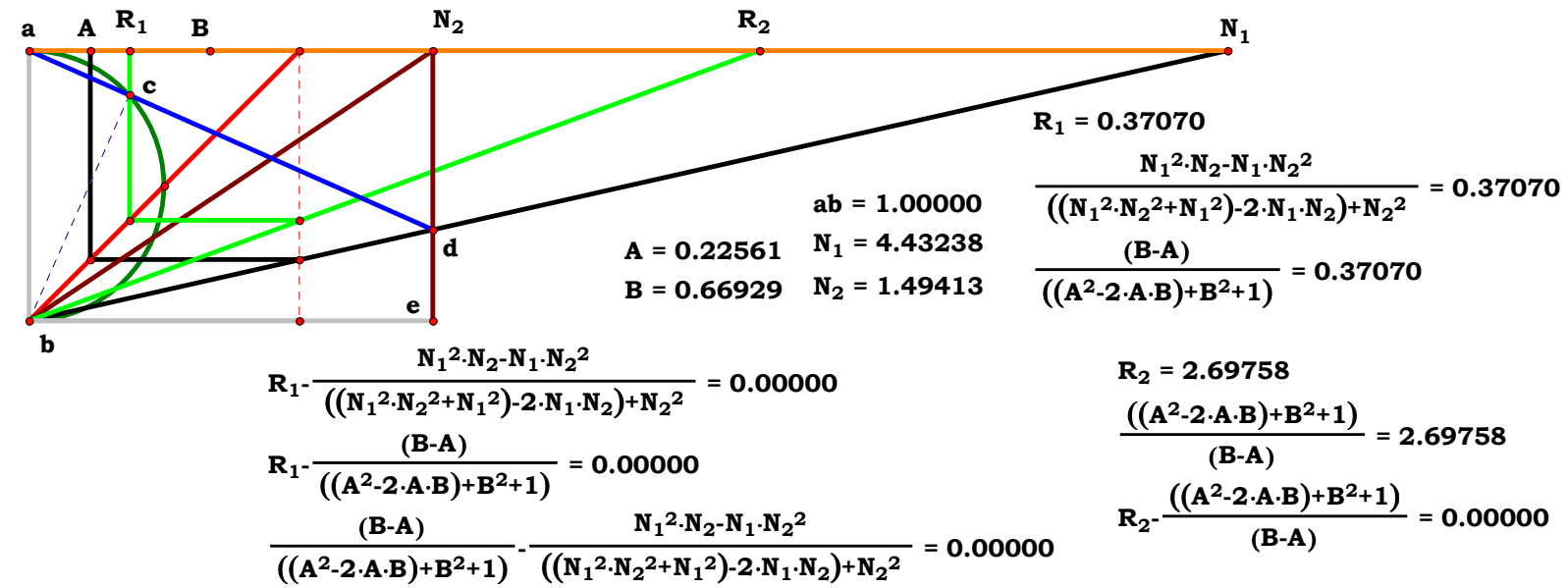
$$\mathbf{ac} := \frac{dN_2}{ad} \quad \mathbf{R_1} := \frac{ac \cdot N_2}{ad}$$

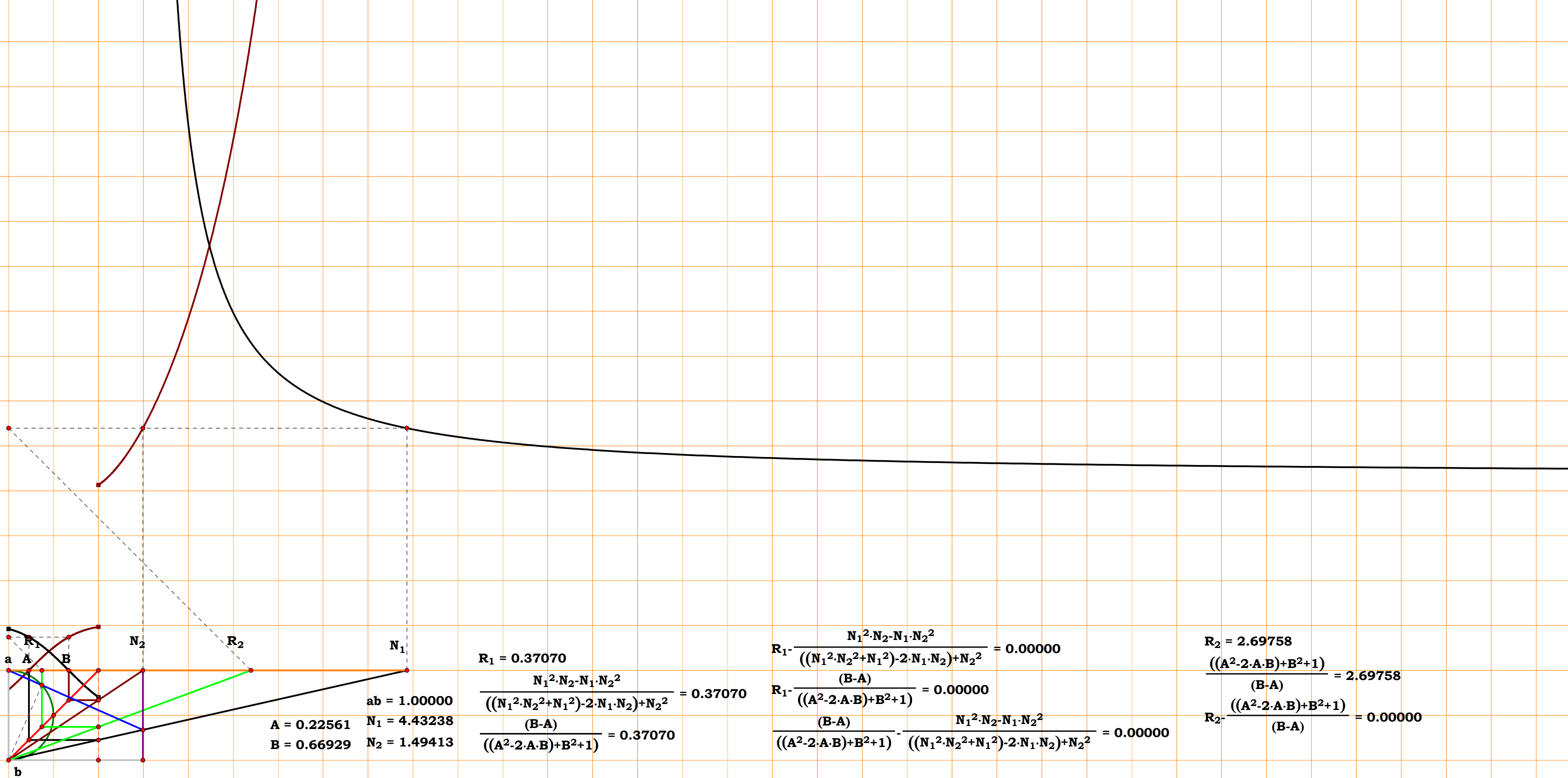
$$\mathbf{R}_1 = 0.370702 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_1^2 \cdot N_2 - N_1 \cdot N_2^2}{N_1^2 \cdot N_2^2 + N_1^2 - 2 \cdot N_1 \cdot N_2 + N_2^2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{(B-A)}{A^2 - 2 \cdot A \cdot B + B^2 + 1} = 0 \quad R_2 - \frac{A^2 - 2 \cdot A \cdot B + B^2 + 1}{(B-A)} = 0$$







Given.

Unit.  $ab := 1$

$N_1 := 4.25954$      $N_2 := 1.69275$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$

Descriptions.

$dN_2 := 1 - \frac{N_2}{N_1}$      $R_1 := \frac{dN_2}{N_2}$

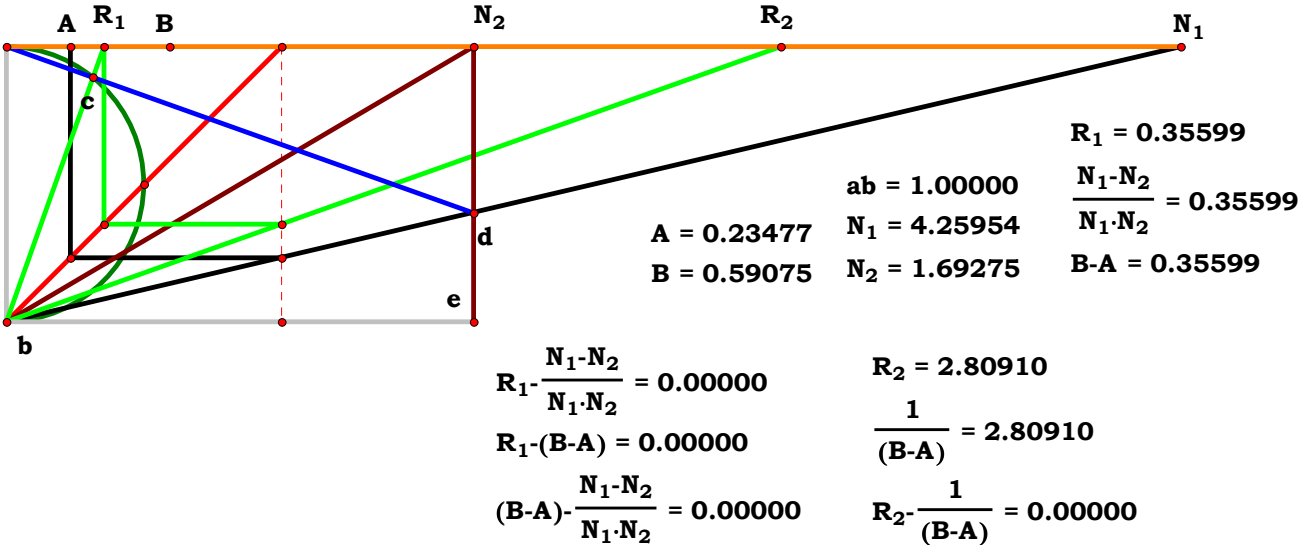
$R_1 = 0.355988$      $R_2 := \frac{1}{R_1}$

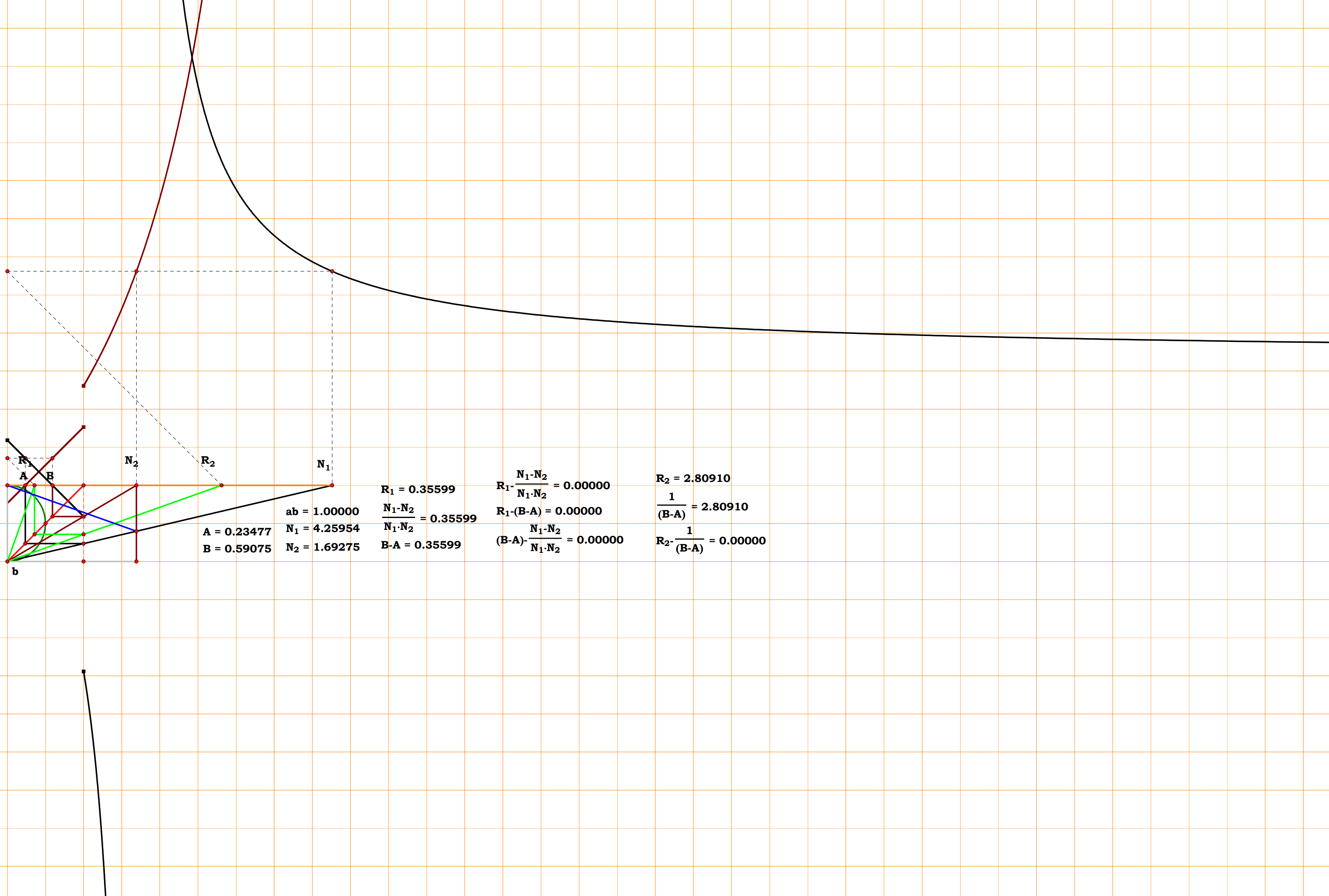
Definitions.

$R_1 - \frac{N_1 - N_2}{N_1 \cdot N_2} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$

$R_1 - (B - A) = 0$      $R_2 - \frac{1}{B - A} = 0$





**2SMT2R2**

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2}$$
$$\mathbf{de} := \frac{\mathbf{N}_2}{\mathbf{N}_1} \quad \mathbf{dN}_2 := 1 - \mathbf{de} \quad \mathbf{R}_1 := \sqrt{\mathbf{de} \cdot \mathbf{dN}_2}$$

$$\mathbf{R}_1 = 0.483442 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{\sqrt{N_1 \cdot N_2 - N_2^2}}{N_1} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0$$

$$R_1 - \frac{A \cdot \sqrt{(B-A)}}{B \cdot \sqrt{A}} = 0 \quad R_2 - \frac{B \cdot \sqrt{A}}{A \cdot \sqrt{(B-A)}} = 0$$

**a**    **A**    **R<sub>1</sub>**    **B**    **N<sub>2</sub>**    **R<sub>2</sub>**    **N<sub>1</sub>**

**b**    **c**    **d**    **e**

**R<sub>1</sub> = 0.48344**  
 $\frac{\sqrt{N_1 \cdot N_2 - N_2^2}}{N_1} = 0.48344$

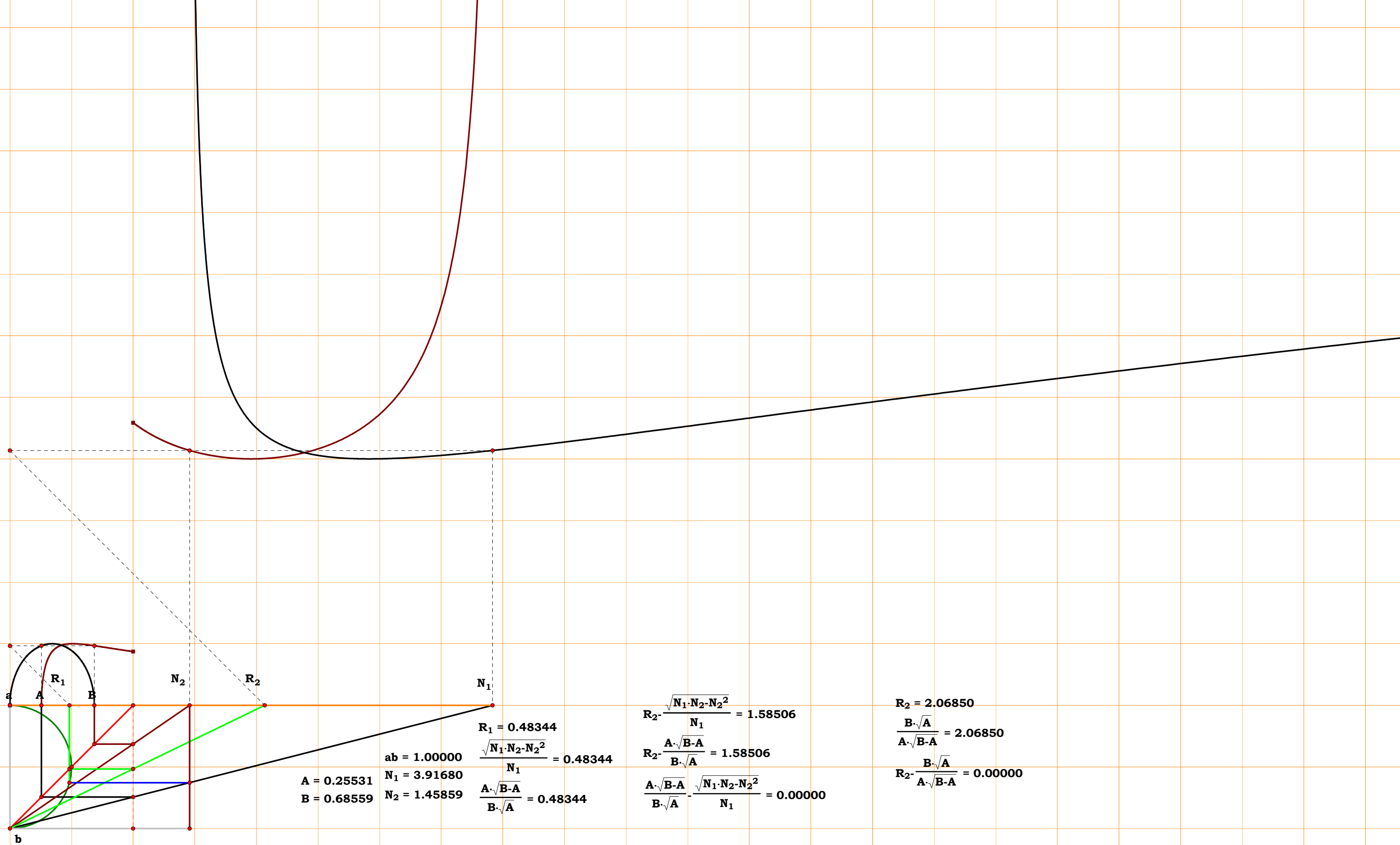
**ab = 1.00000**  
**N<sub>1</sub> = 3.91680**  
**B = 0.68559**    **N<sub>2</sub> = 1.45859**  
 $\frac{A \cdot \sqrt{B-A}}{B \cdot \sqrt{A}} = 0.48344$

**R<sub>2</sub> -  $\frac{\sqrt{N_1 \cdot N_2 - N_2^2}}{N_1}$  = 1.58506**

**R<sub>2</sub> -  $\frac{A \cdot \sqrt{B-A}}{B \cdot \sqrt{A}}$  = 1.58506**

**$\frac{A \cdot \sqrt{B-A}}{B \cdot \sqrt{A}} - \frac{\sqrt{N_1 \cdot N_2 - N_2^2}}{N_1}$  = 0.00000**

**R<sub>2</sub> = 2.06850**  
 $\frac{B \cdot \sqrt{A}}{A \cdot \sqrt{B-A}} = 2.06850$   
**R<sub>2</sub> -  $\frac{B \cdot \sqrt{A}}{A \cdot \sqrt{B-A}}$  = 0.00000**





2SMT2R3

Given.

Unit.  $ab := 1 \quad N_1 := 1.85701$

$N_2 := 1.57856 \quad N_3 := 2.67084$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3}$

Descriptions.

$bc := \frac{N_2}{N_1} \quad ac := 1 - bc$

$cd := \sqrt{bc \cdot ac} \quad bg := \frac{cd}{ac}$

$R_1 := \frac{N_3 \cdot bg}{N_3 + bg}$

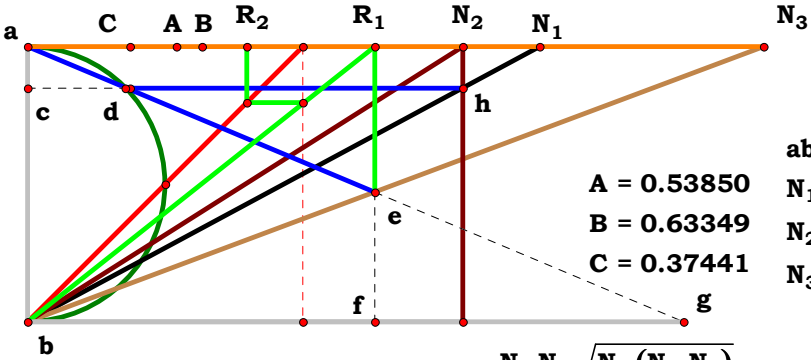
$R_1 = 1.258799 \quad R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} = 0$$

$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$

$$R_1 - \frac{\sqrt{A \cdot (B - A)}}{C \cdot \sqrt{A \cdot (B - A)} + (B - A)} = 0 \quad R_2 - \frac{C \cdot \sqrt{A \cdot (B - A)} + (B - A)}{\sqrt{A \cdot (B - A)}} = 0$$



$$R_1 - \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} = 0.00000$$

$$R_1 - \frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} = 0.00000$$

$$\frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} - \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} = 0.00000$$

$R_1 = 1.25879$

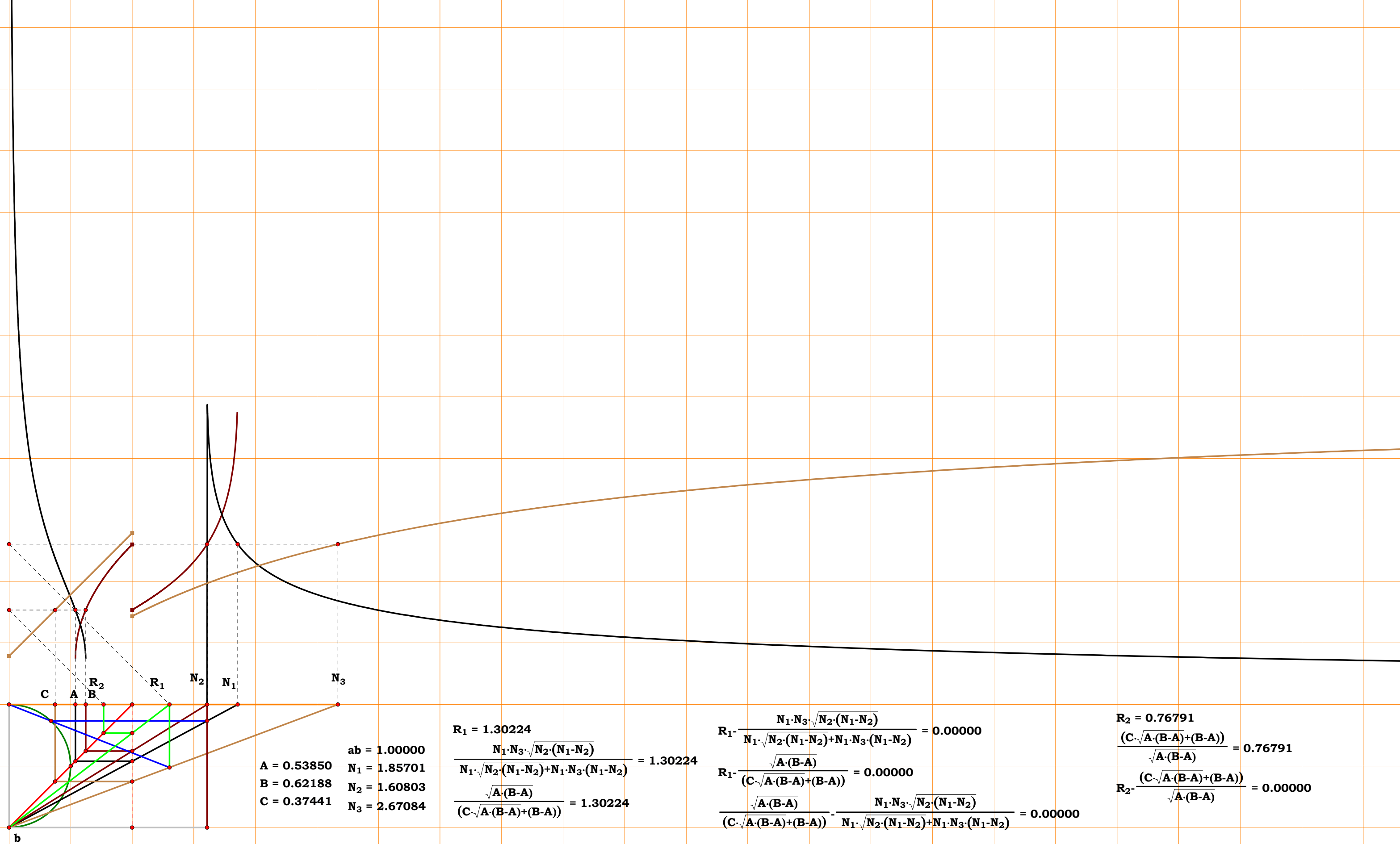
$$\frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} = 1.25879$$

$$\frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} = 1.25879$$

$R_2 = 0.79441$

$$\frac{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))}{\sqrt{A \cdot (B - A)}} = 0.79441$$

$$R_2 - \frac{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))}{\sqrt{A \cdot (B - A)}} = 0.00000$$



**A = 0.53850**  
**B = 0.62188**  
**C = 0.37441**

**ab = 1.00000**  
**N<sub>1</sub> = 1.85701**  
**N<sub>2</sub> = 1.60803**  
**N<sub>3</sub> = 2.67084**

$$\begin{aligned}
 R_1 &= 1.30224 \\
 \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} &= 1.30224 \\
 \frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} &= 1.30224
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} &= 0.00000 \\
 R_1 - \frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} &= 0.00000 \\
 \frac{\sqrt{A \cdot (B - A)}}{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))} - \frac{N_1 \cdot N_3 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.76791 \\
 \frac{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))}{\sqrt{A \cdot (B - A)}} &= 0.76791 \\
 R_2 - \frac{(C \cdot \sqrt{A \cdot (B - A)} + (B - A))}{\sqrt{A \cdot (B - A)}} &= 0.00000
 \end{aligned}$$



2SMT2R4

Given.

Unit.     $ab := 1$

$N_1 := 3.13506$      $N_2 := 1.93419$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$

Descriptions.

$ef := \frac{N_2}{N_1}$      $eN_2 := 1 - ef$

$cd := \sqrt{ef \cdot eN_2}$      $R_1 := \frac{cd}{ef}$

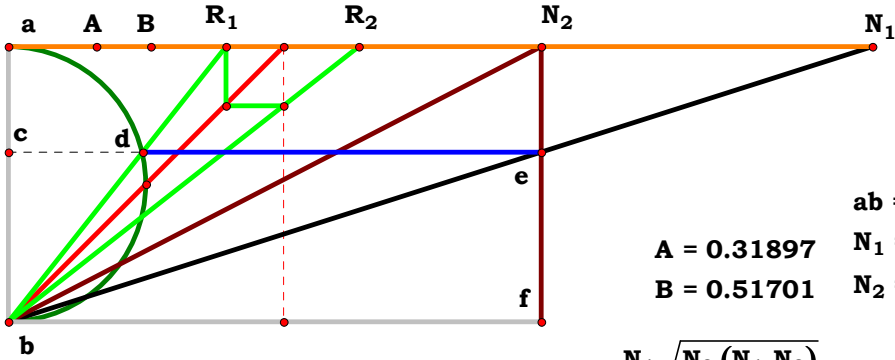
$R_1 = 0.78795$      $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot N_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{B \cdot \sqrt{B - A}}{\sqrt{A \cdot B^2}} = 0 \quad R_2 - \frac{\sqrt{A \cdot B^2}}{B \cdot \sqrt{B - A}} = 0$$



$ab = 1.00000$   
 $A = 0.31897$      $N_1 = 3.13506$   
 $B = 0.51701$      $N_2 = 1.93419$

$$R_1 - \frac{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot N_2} = 0.00000$$

$$R_1 - \frac{(B \cdot \sqrt{B - A})}{\sqrt{A \cdot B^2}} = 0.00000$$

$$\frac{(B \cdot \sqrt{B - A})}{\sqrt{A \cdot B^2}} - \frac{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot N_2} = 0.00000$$

$R_1 = 0.78795$

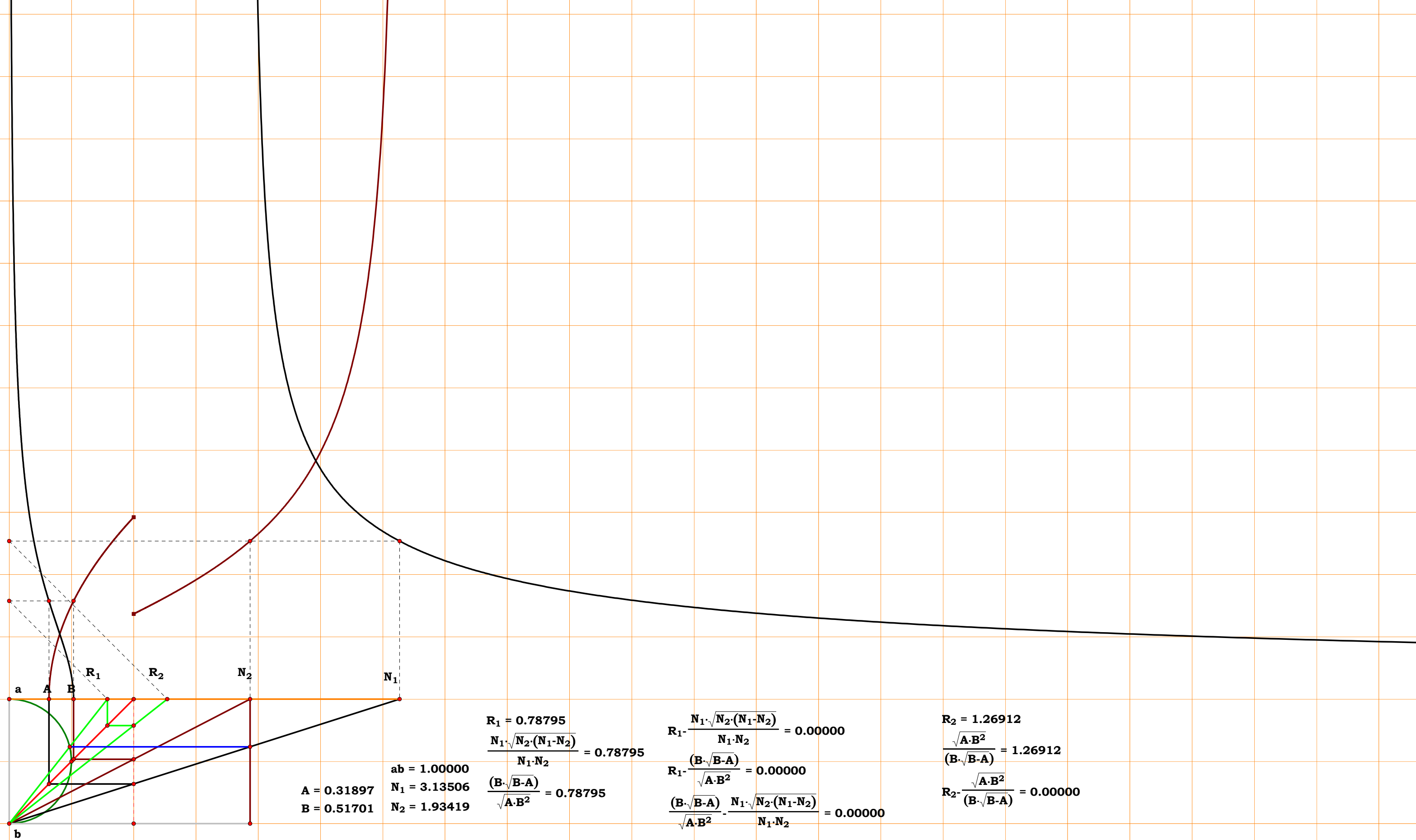
$$\frac{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}}{N_1 \cdot N_2} = 0.78795$$

$$\frac{(B \cdot \sqrt{B - A})}{\sqrt{A \cdot B^2}} = 0.78795$$

$R_2 = 1.26912$

$$\frac{\sqrt{A \cdot B^2}}{(B \cdot \sqrt{B - A})} = 1.26912$$

$$R_2 - \frac{\sqrt{A \cdot B^2}}{(B \cdot \sqrt{B - A})} = 0.00000$$



**Given.**  
**Unit.**  $ab := 1$   
 **$N_1 := 2.78321$      $N_2 := 1.81122$**

### Descriptions.

$$\mathbf{ef} := \frac{N_2}{N_1} \quad \mathbf{eN}_2 := 1 - \mathbf{ef}$$

$$\mathbf{cd} := \sqrt{\mathbf{eN}_2 \cdot \mathbf{ef}} \quad \mathbf{R}_1 := \frac{\mathbf{cd}}{\mathbf{eN}_2}$$

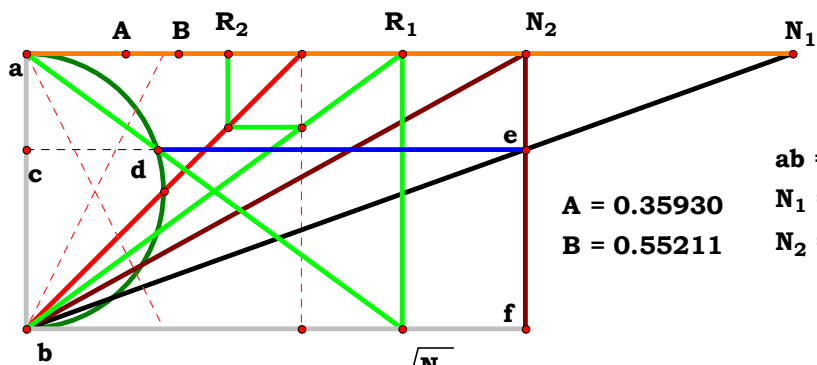
$$\mathbf{R}_1 = 1.365069 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

### Definitions.

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{N}_2}}{\sqrt{\mathbf{N}_1 - \mathbf{N}_2}} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0$$

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{A} \cdot \mathbf{B}}}{\sqrt{\mathbf{B} \cdot \sqrt{\mathbf{B} - \mathbf{A}}}} = 0 \quad \mathbf{R}_2 - \frac{\sqrt{\mathbf{B} \cdot \sqrt{\mathbf{B} - \mathbf{A}}}}{\sqrt{\mathbf{A} \cdot \mathbf{B}}} = 0$$



$$R_1 - \frac{\sqrt{N_2}}{\sqrt{N_1 - N_2}} = 0.00000$$

$$R_1 - \frac{\sqrt{A \cdot B}}{\sqrt{B \cdot (B - A)}} = 0.00000$$

$$\frac{\sqrt{\mathbf{A} \cdot \mathbf{B}}}{\sqrt{\mathbf{B} \cdot (\mathbf{B} - \mathbf{A})}} - \frac{\sqrt{\mathbf{N}_2}}{\sqrt{\mathbf{N}_1 - \mathbf{N}_2}} = 0.00000$$

$$\mathbf{R}_1 = 1.36507$$

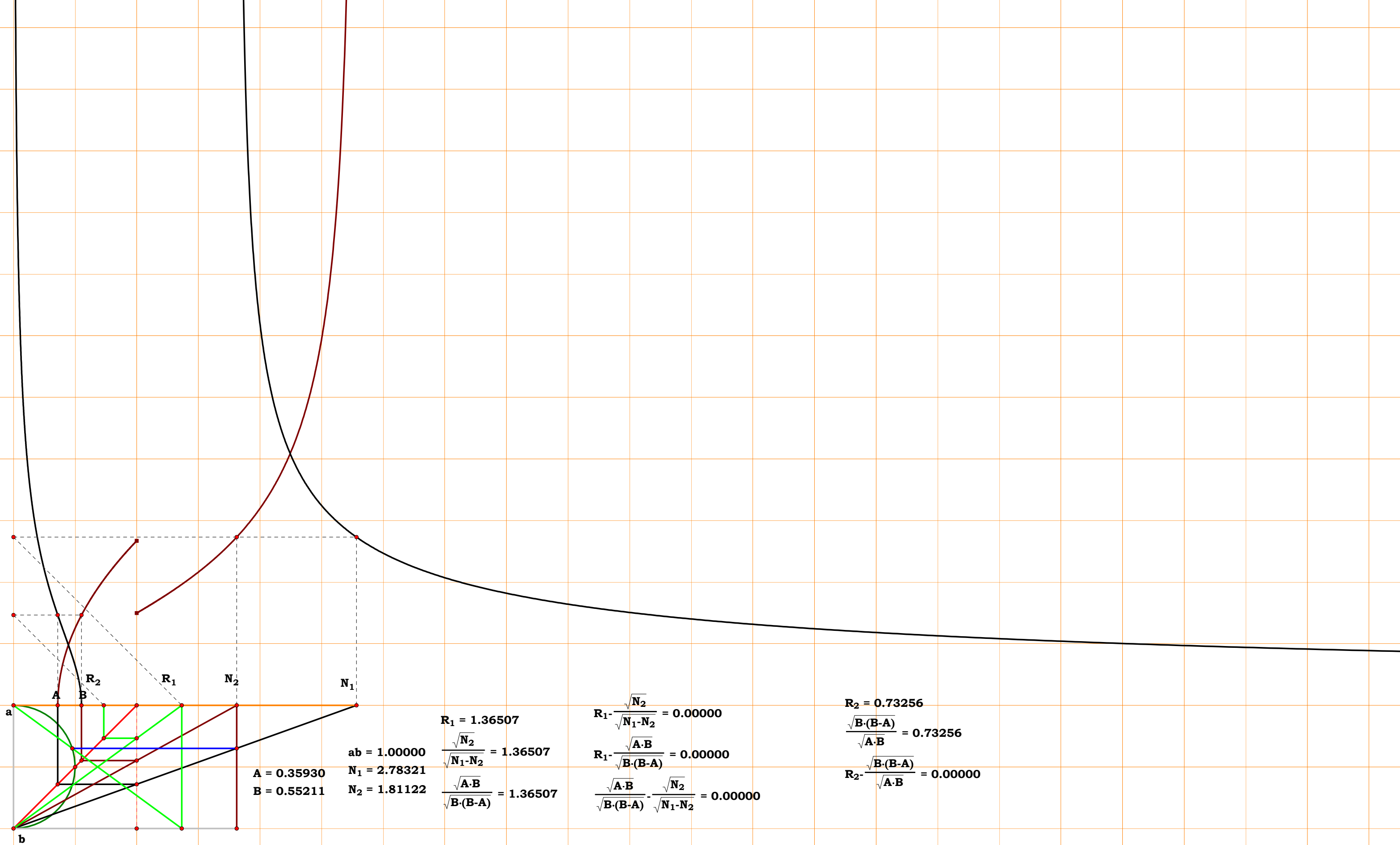
$$\frac{\sqrt{N_2}}{\sqrt{N_1 - N_2}} = 1.36507$$

$$\frac{\sqrt{A \cdot B}}{\sqrt{B \cdot (B - A)}} = 1.36507$$

$$R_2 = 0.73256$$

$$\frac{\sqrt{\mathbf{B} \cdot (\mathbf{B} - \mathbf{A})}}{\sqrt{\mathbf{A} \cdot \mathbf{B}}} = 0.73256$$

$$R_2 - \frac{\sqrt{B \cdot (B-A)}}{\sqrt{A \cdot B}} = 0.00000$$





2SMT2R6

Given.

Unit.  $ab := 1 \quad N_1 := 1.56138$

$N_2 := 1.94250 \quad N_3 := 3.54880 \quad N_4 := 1.29013$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3} \quad D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2} \quad bc := \frac{1}{bN_1}$

$de := \frac{bc}{bN_1} \quad fg := \frac{N_2}{N_3} \quad R_1 := \frac{N_4}{de} \cdot fg$

$R_1 = 2.427768 \quad R_2 := \frac{1}{R_1}$

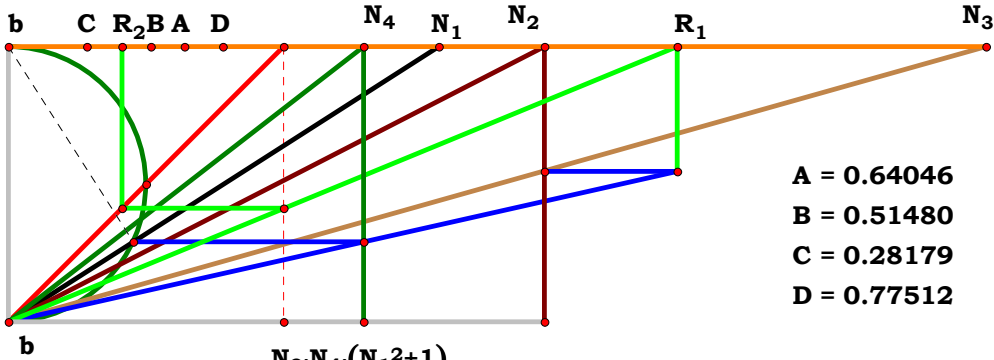
Definitions.

$R_1 - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_3} = 0$

$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$

$N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$

$R_1 - \frac{C \cdot (A^2 + 1)}{A^2 \cdot B \cdot D} = 0 \quad R_2 - \frac{A^2 \cdot B \cdot D}{C \cdot (A^2 + 1)} = 0$



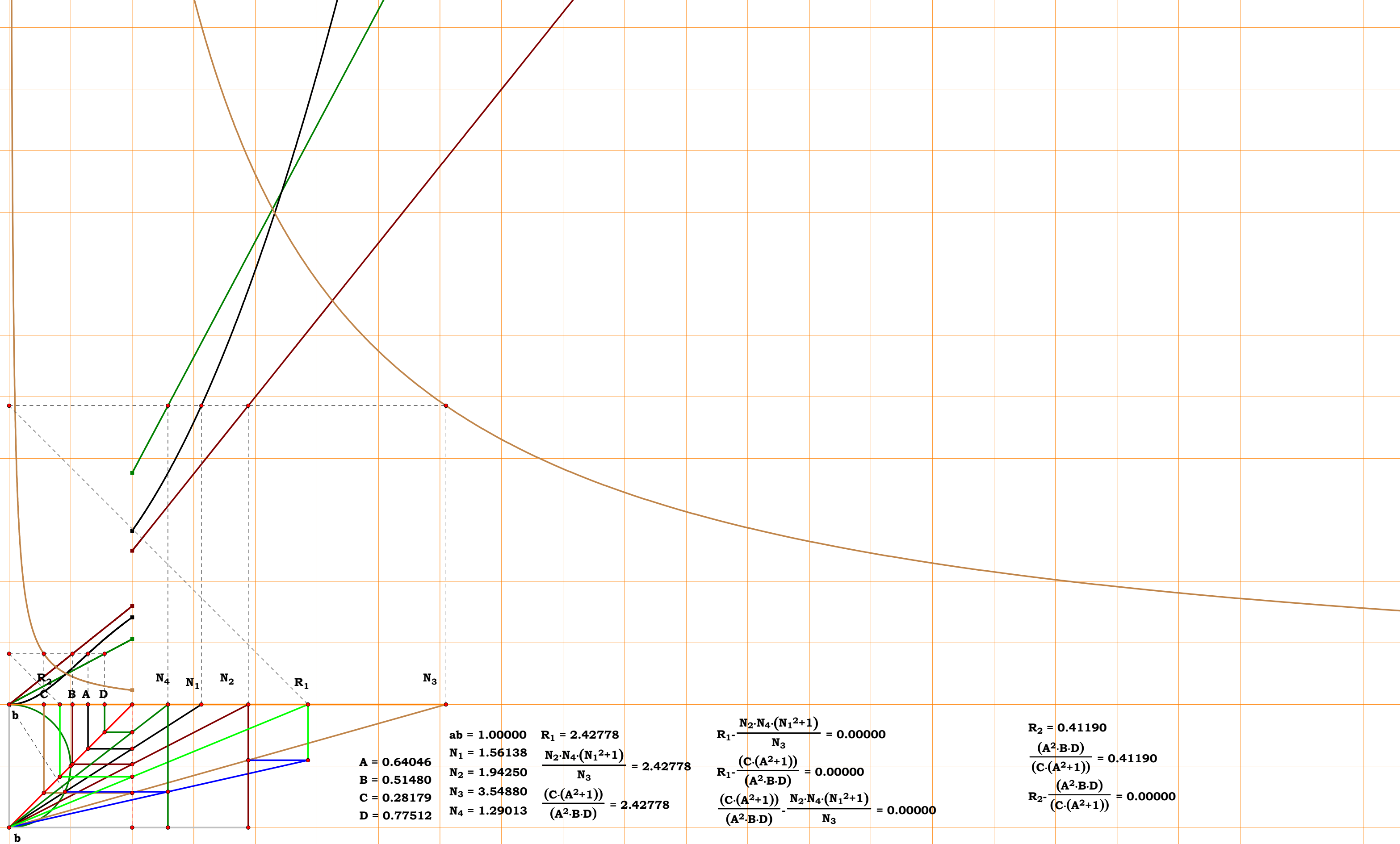
$R_1 - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_3} = 0.000000$

$R_1 - \frac{(C \cdot (A^2 + 1))}{(A^2 \cdot B \cdot D)} = 0.000000$

$\frac{(C \cdot (A^2 + 1))}{(A^2 \cdot B \cdot D)} - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_3} = 0.000000$

$ab = 1.00000 \quad R_1 = 2.42778$   
 $A = 0.64046 \quad N_1 = 1.56138 \quad \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_3} = 2.42778$   
 $B = 0.51480 \quad N_2 = 1.94250$   
 $C = 0.28179 \quad N_3 = 3.54880 \quad \frac{(C \cdot (A^2 + 1))}{(A^2 \cdot B \cdot D)} = 2.42778$   
 $D = 0.77512 \quad N_4 = 1.29013$

$R_2 = 0.41190$   
 $\frac{(A^2 \cdot B \cdot D)}{(C \cdot (A^2 + 1))} = 0.41190$   
 $R_2 - \frac{(A^2 \cdot B \cdot D)}{(C \cdot (A^2 + 1))} = 0.000000$





2SMT2R7

Given.

Unit.  $ab := 1$

$N_1 := 1.33103$     $N_2 := 2.28253$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$     $bd := \frac{1}{bN_1}$     $ef := \frac{bd}{bN_1}$

$R_1 := \frac{N_2}{1 - ef}$     $R_2 := \frac{1}{R_1}$

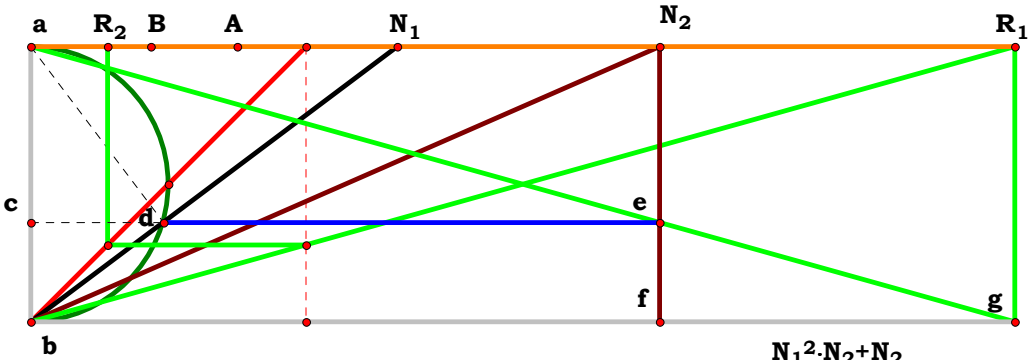
$R_1 = 3.570901$

Definitions.

$$R_1 - \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{A^2 + 1}{B} = 0 \quad R_2 - \frac{B}{A^2 + 1} = 0$$



$ab = 1.00000$   
 $A = 0.75131$     $N_1 = 1.33102$   
 $B = 0.43811$     $N_2 = 2.28253$

$$R_1 = 3.57093$$

$$\frac{N_1^2 \cdot N_2 + N_2}{N_1^2} = 3.57093$$

$$\frac{(A^2 + 1)}{B} = 3.57093$$

$$R_1 - \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} = 0.00000$$

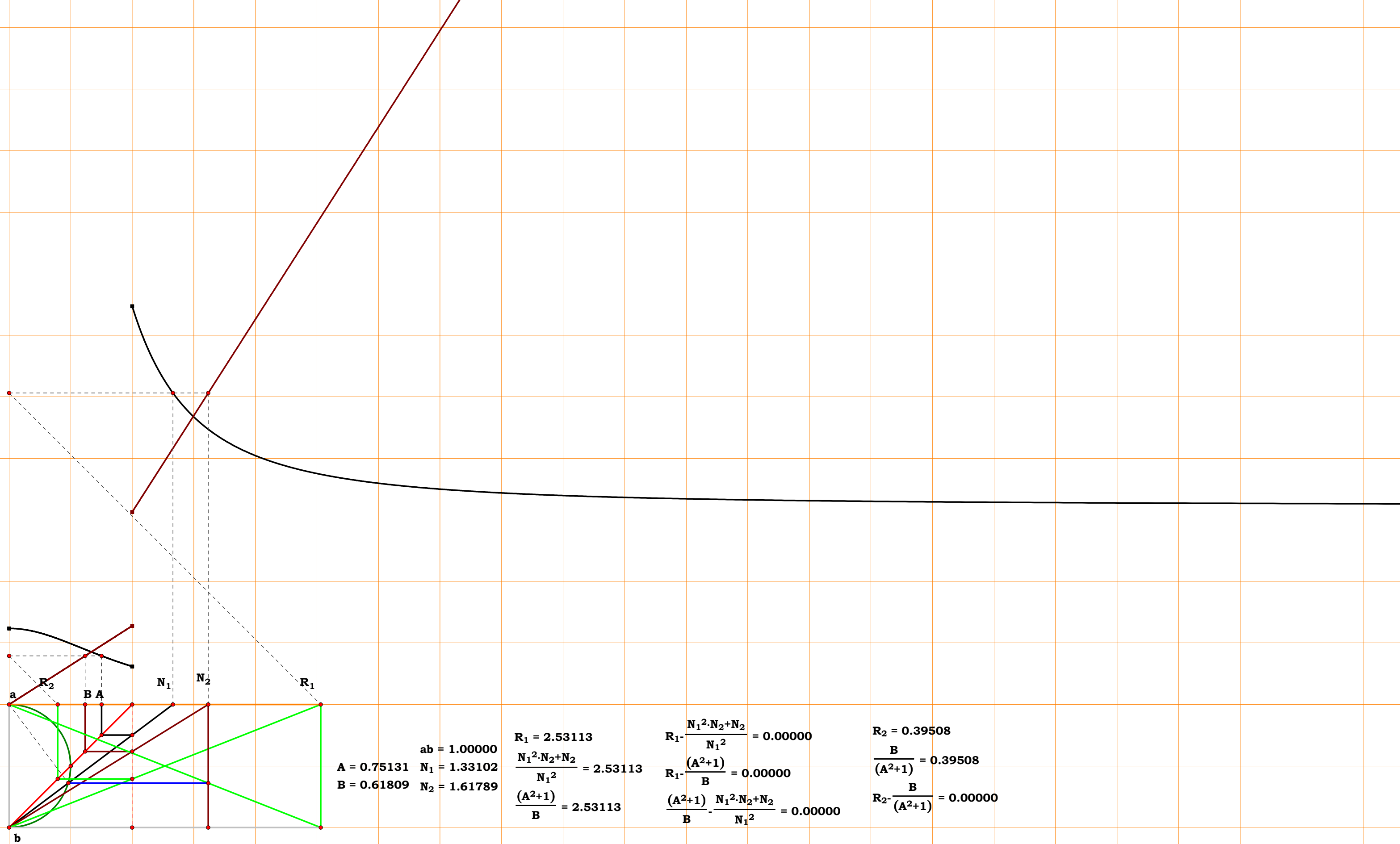
$$R_1 - \frac{(A^2 + 1)}{B} = 0.00000$$

$$\frac{(A^2 + 1)}{B} - \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} = 0.00000$$

$R_2 = 0.28004$

$$\frac{B}{(A^2 + 1)} = 0.28004$$

$$R_2 - \frac{B}{(A^2 + 1)} = 0.00000$$



$$\begin{aligned}
 ab &= 1.00000 \\
 A &= 0.75131 & N_1 &= 1.33102 \\
 B &= 0.61809 & N_2 &= 1.61789
 \end{aligned}$$

$$\begin{aligned}
 R_1 &= 2.53113 \\
 \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} &= 2.53113 \\
 \frac{(A^2 + 1)}{B} &= 2.53113
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} &= 0.00000 \\
 R_1 - \frac{(A^2 + 1)}{B} &= 0.00000 \\
 \frac{(A^2 + 1)}{B} - \frac{N_1^2 \cdot N_2 + N_2}{N_1^2} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.39508 \\
 \frac{B}{(A^2 + 1)} &= 0.39508 \\
 R_2 - \frac{B}{(A^2 + 1)} &= 0.00000
 \end{aligned}$$



Given.

Unit.  $ab := 1 \quad N_1 := 1.56715$

$N_2 := 1.27983$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2} \quad bc := \frac{1}{bN_1}$

$de := \frac{bc}{bN_1} \quad R_1 := \frac{N_2}{de}$

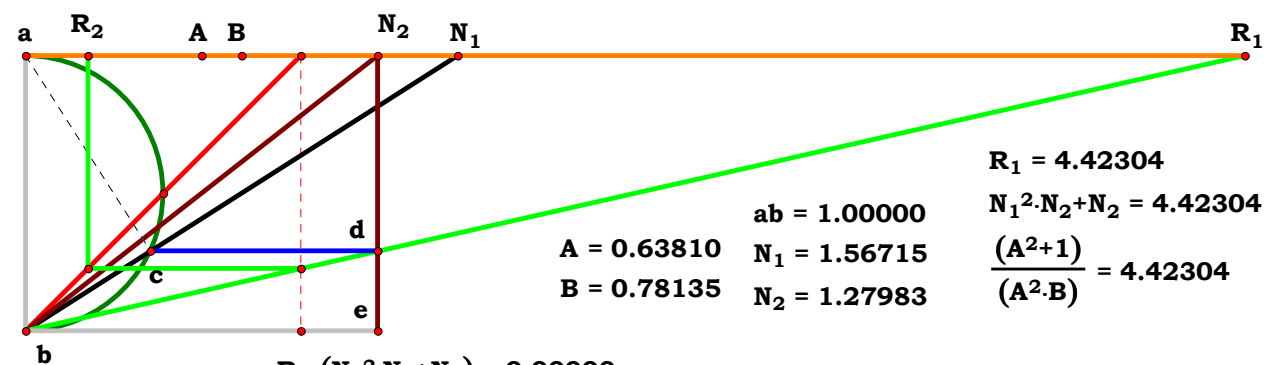
$R_1 = 4.42304 \quad R_2 := \frac{1}{R_1}$

Definitions.

$R_1 - (N_1^2 \cdot N_2 + N_2) = 0$

$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$

$R_1 - \frac{(A^2 + 1)}{A^2 \cdot B} = 0 \quad R_2 - \frac{A^2 \cdot B}{A^2 + 1} = 0$



$R_1 - (N_1^2 \cdot N_2 + N_2) = 0.00000$

$R_1 - \frac{(A^2 + 1)}{(A^2 \cdot B)} = 0.00000$

$\frac{(A^2 + 1)}{(A^2 \cdot B)} - (N_1^2 \cdot N_2 + N_2) = 0.00000$

$ab = 1.00000$

$N_1 = 1.56715$

$N_2 = 1.27983$

$R_1 = 4.42304$

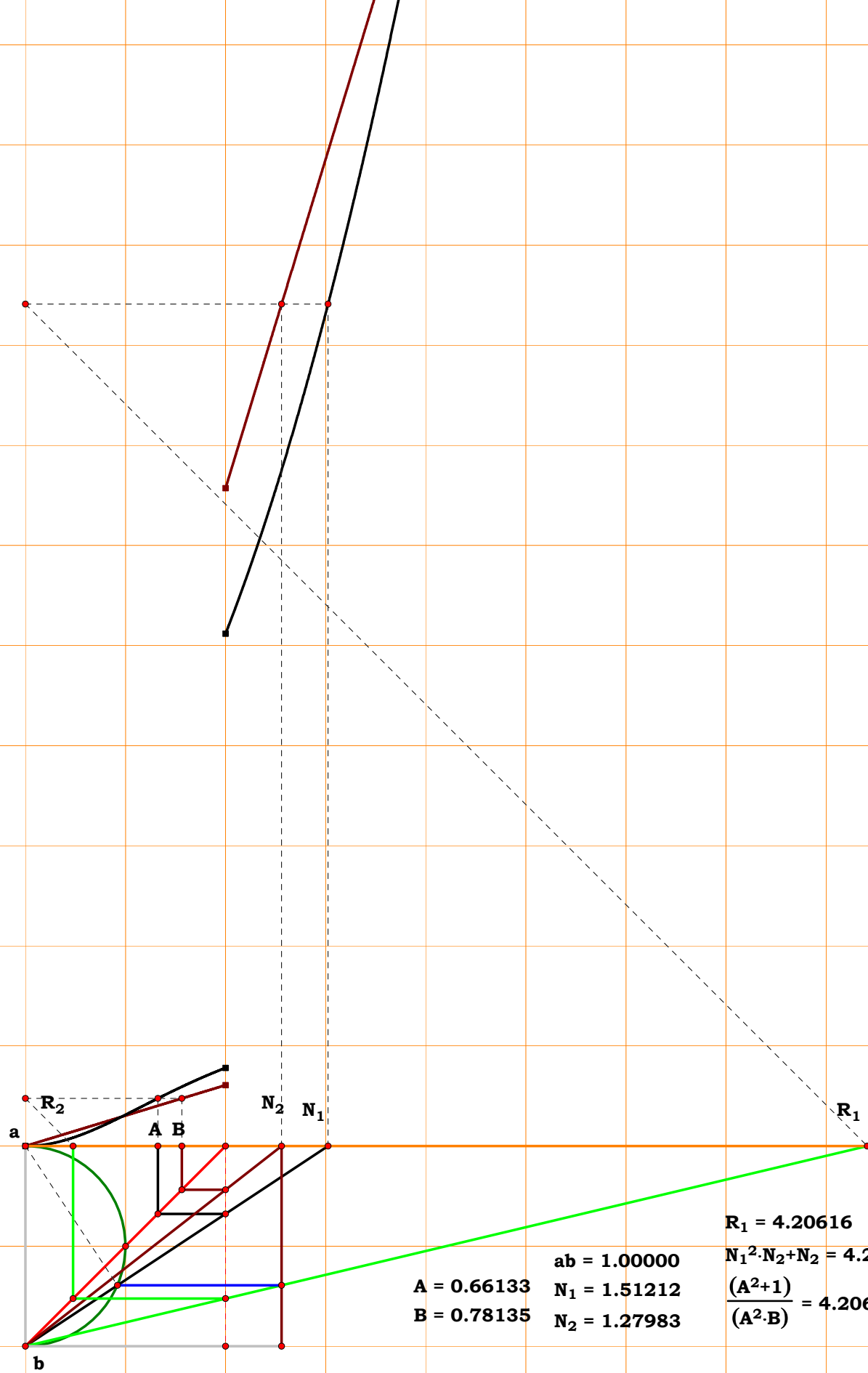
$N_1^2 \cdot N_2 + N_2 = 4.42304$

$\frac{(A^2 + 1)}{(A^2 \cdot B)} = 4.42304$

$R_2 = 0.22609$

$\frac{(A^2 \cdot B)}{(A^2 + 1)} = 0.22609$

$R_2 - \frac{(A^2 \cdot B)}{(A^2 + 1)} = 0.00000$



$$\begin{aligned} R_1 &= 4.20616 \\ N_1^2 \cdot N_2 + N_2 &= 4.20616 \\ \frac{(A^2+1)}{(A^2 \cdot B)} &= 4.20616 \end{aligned}$$

$$\begin{aligned} R_1 - (N_1^2 \cdot N_2 + N_2) &= 0.00000 \\ \frac{(A^2 + 1)}{(A^2 \cdot B)} &= 0.00000 \\ \frac{(A^2 + 1)}{(A^2 \cdot B)} - (N_1^2 \cdot N_2 + N_2) &= 0.00000 \end{aligned}$$

$$R_2 = 0.23775$$
$$\frac{(A^2 \cdot B)}{(A^2 + 1)} = 0.23775$$
$$R_2 - \frac{(A^2 \cdot B)}{(A^2 + 1)} = 0.00000$$



2SMT2R9

Given.

Unit.  $ab := 1$

$N_1 := 1.95041$   $N_2 := 1.28816$

$N_3 := 2.67771$   $N_4 := 1.57968$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$

Descriptions.

$ac := 1 - \frac{N_2}{N_1}$   $cd := \sqrt{ac \cdot (1 - ac)}$

$bf := \frac{cd}{ac}$   $gh := \frac{bf}{bf + N_3}$   $R_1 := \frac{N_4}{gh}$

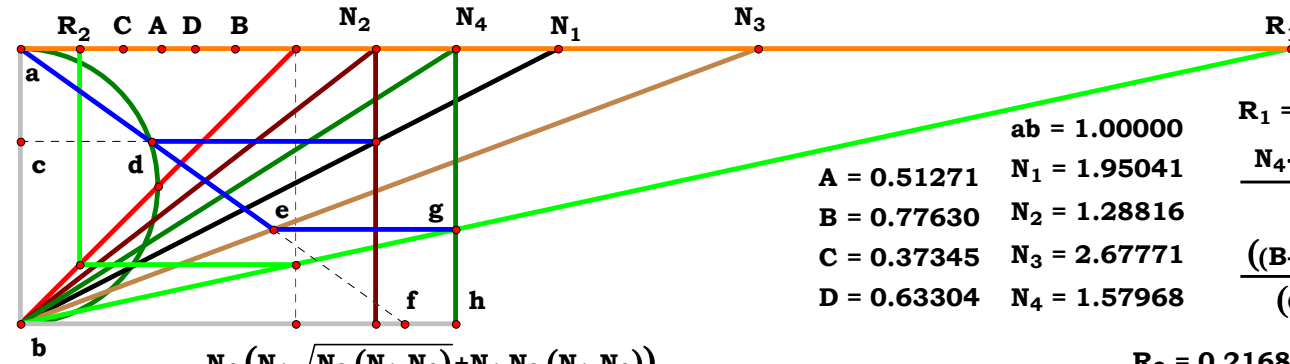
$R_1 = 4.612585$   $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_4 \cdot [N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2)]}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{[(B - A) + C \cdot \sqrt{A \cdot (B - A)}]}{C \cdot D \cdot \sqrt{A \cdot (B - A)}} = 0 \quad R_2 - \frac{C \cdot D \cdot \sqrt{A \cdot (B - A)}}{[(B - A) + C \cdot \sqrt{A \cdot (B - A)}]} = 0$$



$ab = 1.00000$   
 $A = 0.51271$   $N_1 = 1.95041$   
 $B = 0.77630$   $N_2 = 1.28816$   
 $C = 0.37345$   $N_3 = 2.67771$   
 $D = 0.63304$   $N_4 = 1.57968$

$$R_1 = 4.61259$$

$$\frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 4.61259$$

$$\frac{((B - A) + C \cdot \sqrt{A \cdot (B - A)})}{(C \cdot D \cdot \sqrt{A \cdot (B - A)})} = 4.61259$$

$$R_1 - \frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 0.00000$$

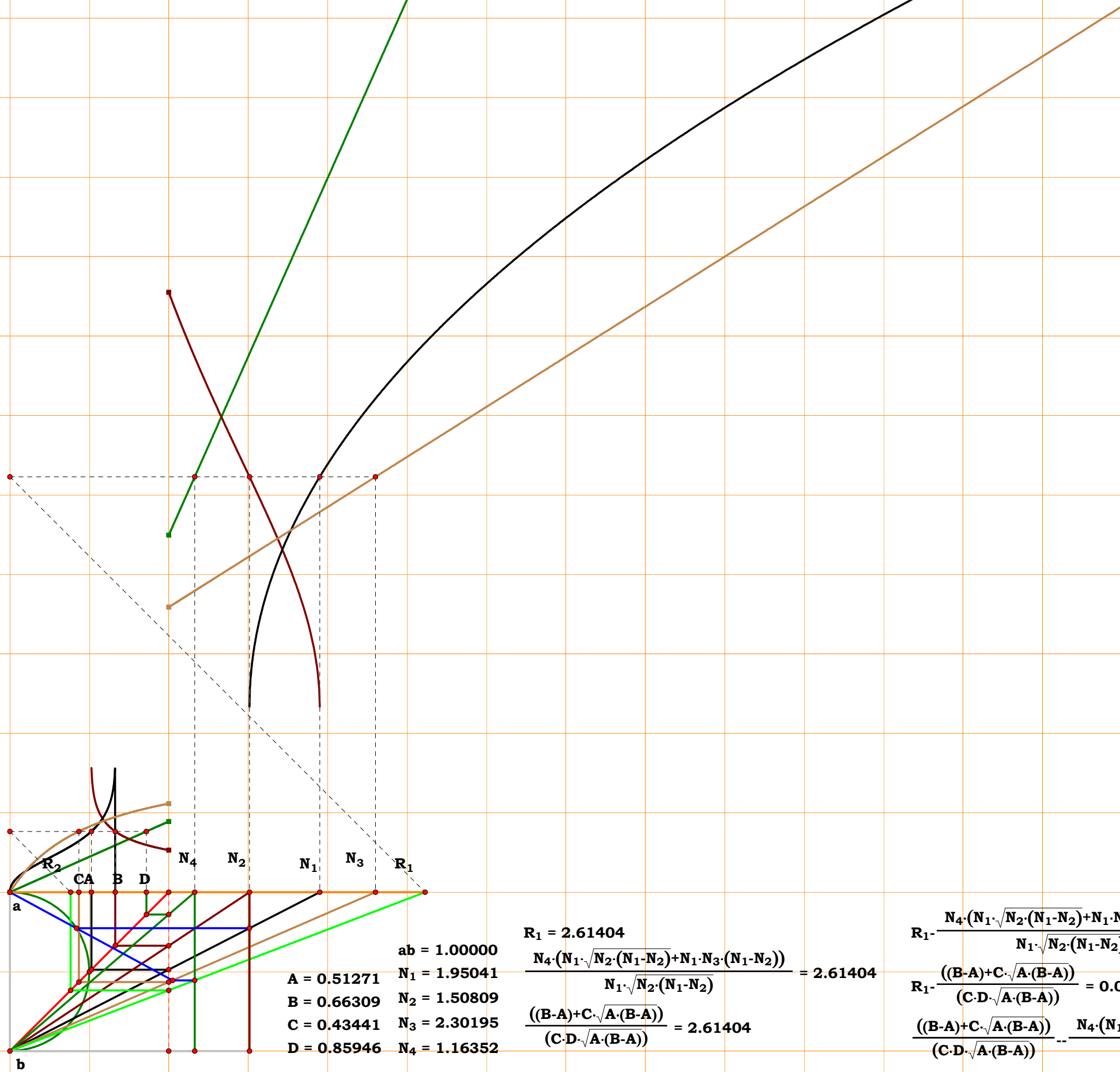
$$R_1 - \frac{((B - A) + C \cdot \sqrt{A \cdot (B - A)})}{(C \cdot D \cdot \sqrt{A \cdot (B - A)})} = 0.00000$$

$$\frac{((B - A) + C \cdot \sqrt{A \cdot (B - A)})}{(C \cdot D \cdot \sqrt{A \cdot (B - A)})} - \frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 9.22518$$

$$R_2 = 0.21680$$

$$\frac{(C \cdot D \cdot \sqrt{A \cdot (B - A)})}{((B - A) + C \cdot \sqrt{A \cdot (B - A)})} = 0.21680$$

$$R_2 - \frac{(C \cdot D \cdot \sqrt{A \cdot (B - A)})}{((B - A) + C \cdot \sqrt{A \cdot (B - A)})} = 0.00000$$



$ab = 1.00000$   
 $A = 0.51271$   $N_1 = 1.95041$   
 $B = 0.66309$   $N_2 = 1.50809$   
 $C = 0.43441$   $N_3 = 2.30195$   
 $D = 0.85946$   $N_4 = 1.16352$

$$R_1 = 2.61404$$

$$\frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 2.61404$$

$$\frac{((B-A) + C \cdot \sqrt{A \cdot (B-A)})}{(C \cdot D \cdot \sqrt{A \cdot (B-A)})} = 2.61404$$

$$R_1 - \frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 0.00000$$

$$R_1 - \frac{((B-A) + C \cdot \sqrt{A \cdot (B-A)})}{(C \cdot D \cdot \sqrt{A \cdot (B-A)})} = 0.00000$$

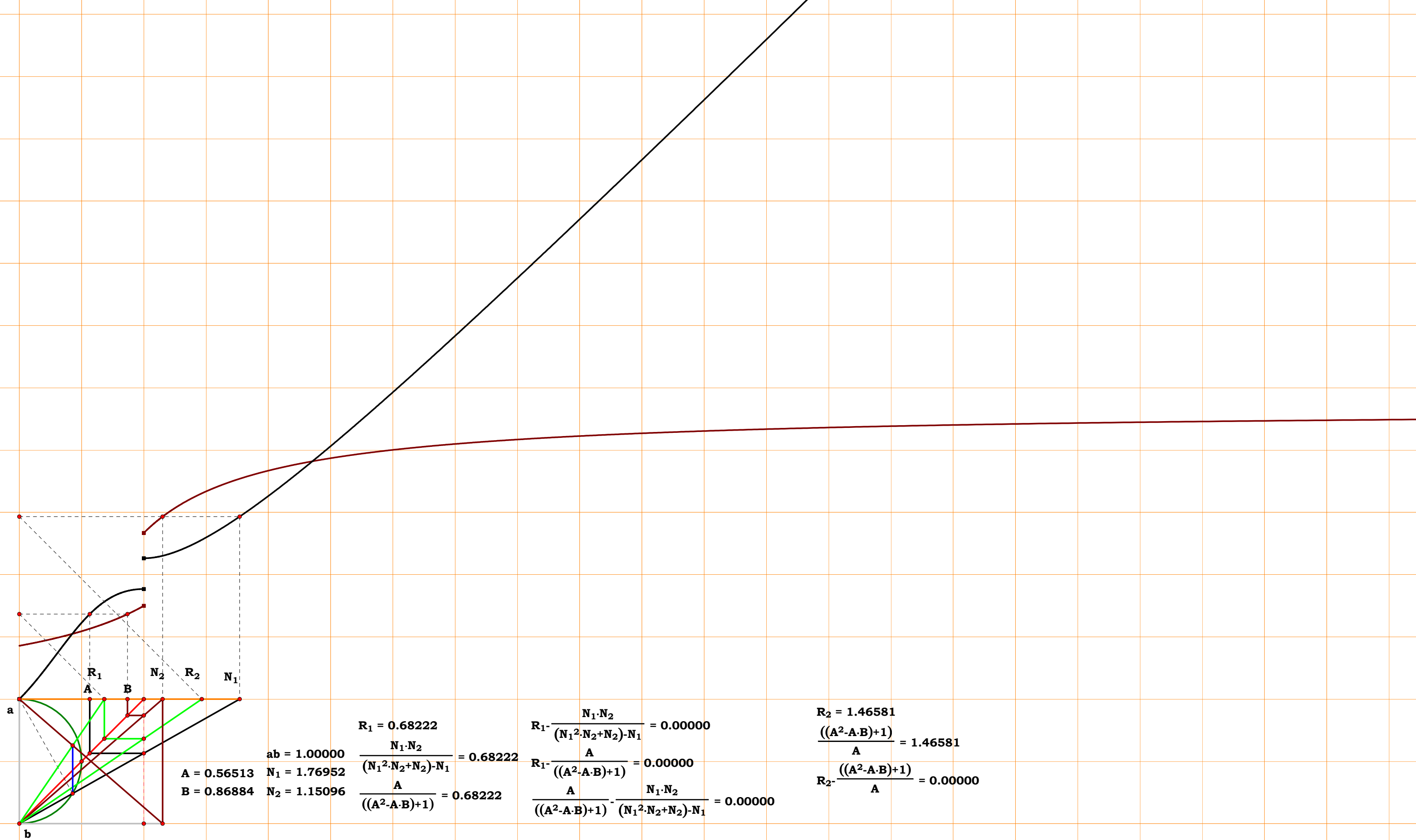
$$\frac{((B-A) + C \cdot \sqrt{A \cdot (B-A)})}{(C \cdot D \cdot \sqrt{A \cdot (B-A)})} - \frac{N_4 \cdot (N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)} + N_1 \cdot N_3 \cdot (N_1 - N_2))}{N_1 \cdot \sqrt{N_2 \cdot (N_1 - N_2)}} = 5.22807$$

$$R_2 = 0.38255$$

$$\frac{(C \cdot D \cdot \sqrt{A \cdot (B-A)})}{((B-A) + C \cdot \sqrt{A \cdot (B-A)})} = 0.38255$$

$$R_2 - \frac{(C \cdot D \cdot \sqrt{A \cdot (B-A)})}{((B-A) + C \cdot \sqrt{A \cdot (B-A)})} = 0.00000$$







Given.

Unit.  $ab := 1$

$N_1 := 1.81893 \quad N_2 := 2.97919$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2}$

Descriptions.

$fg := \frac{N_2}{N_1 + N_2} \quad cd := \sqrt{fg \cdot (1 - fg)} \quad R_1 := \frac{cd}{1 - fg}$

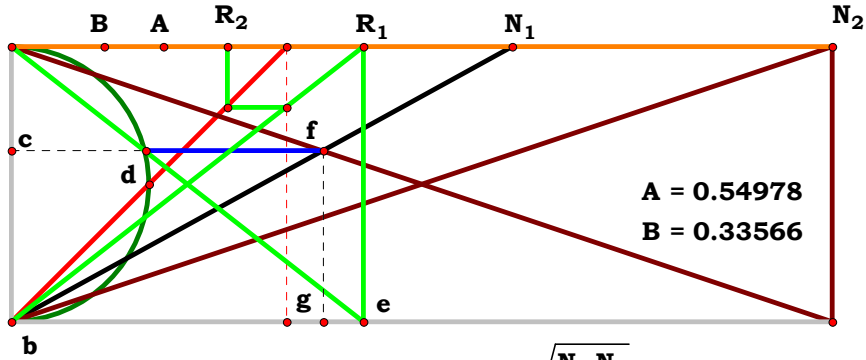
$R_1 = 1.279797 \quad R_2 := \frac{1}{R_1}$

Definitions.

$R_1 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0$

$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$

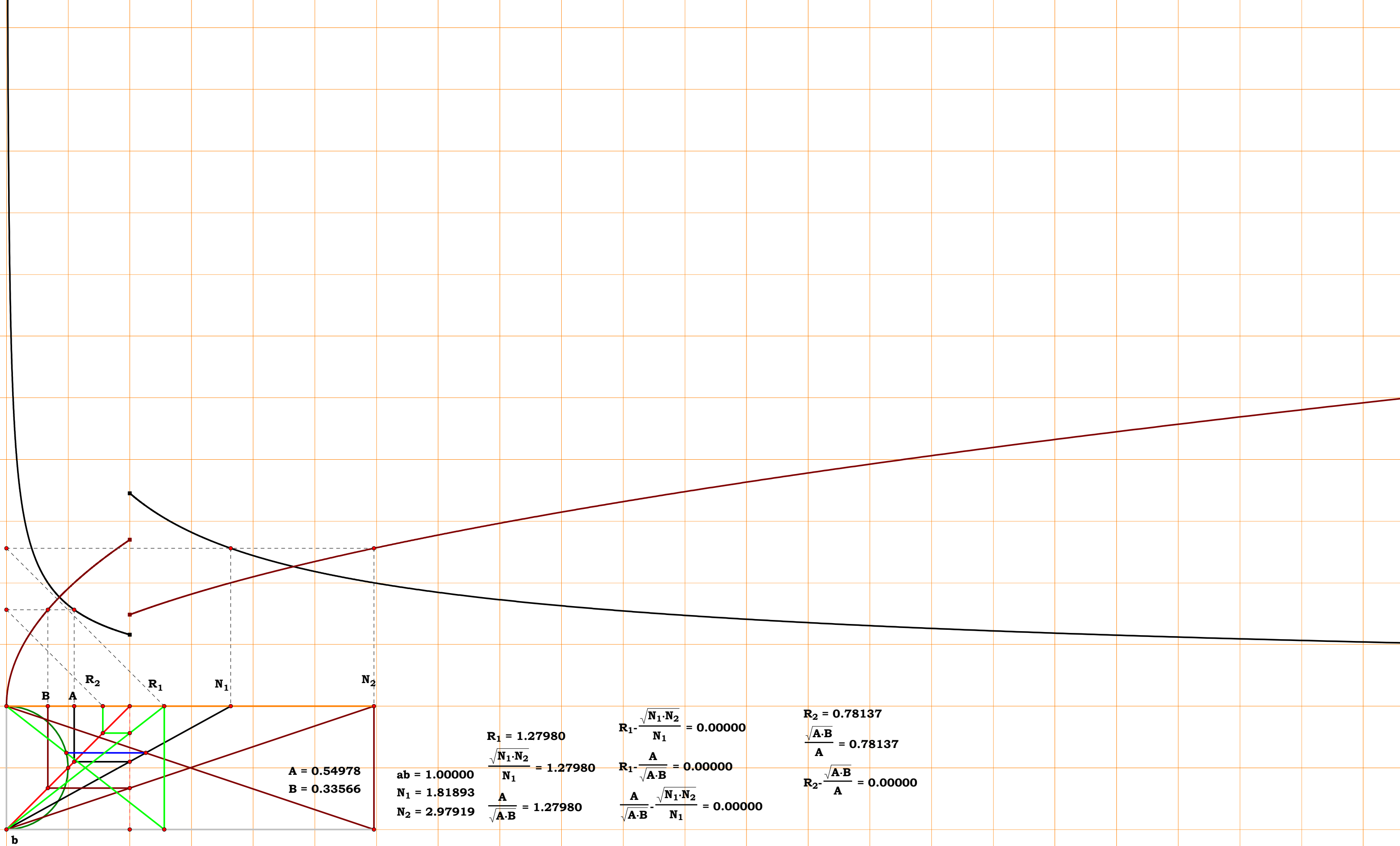
$R_1 - \frac{A}{\sqrt{A \cdot B}} = 0 \quad R_2 - \frac{\sqrt{A \cdot B}}{A} = 0$



$R_1 - \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0.00000$   
 $R_1 - \frac{A}{\sqrt{A \cdot B}} = 0.00000$   
 $\frac{A}{\sqrt{A \cdot B}} - \frac{\sqrt{N_1 \cdot N_2}}{N_1} = 0.00000$

$ab = 1.00000$   
 $N_1 = 1.81893$   
 $N_2 = 2.97919$   
 $R_1 = 1.27980$   
 $\frac{\sqrt{N_1 \cdot N_2}}{N_1} = 1.27980$   
 $\frac{A}{\sqrt{A \cdot B}} = 1.27980$

$R_2 = 0.78137$   
 $\frac{\sqrt{A \cdot B}}{A} = 0.78137$   
 $R_2 - \frac{\sqrt{A \cdot B}}{A} = 0.00000$





Given.

Unit.  $ab := 1$

$N_1 := 1.52291$      $N_2 := 3.48416$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$      $be := \frac{1}{bN_1}$

$bf := \frac{N_1 \cdot be}{bN_1}$      $fh := N_2 - bf$

$fg := \frac{fh}{N_2}$      $ac := 1 - fg$

$cg := \sqrt{ac \cdot fg}$      $R_1 := \frac{cg}{fg}$

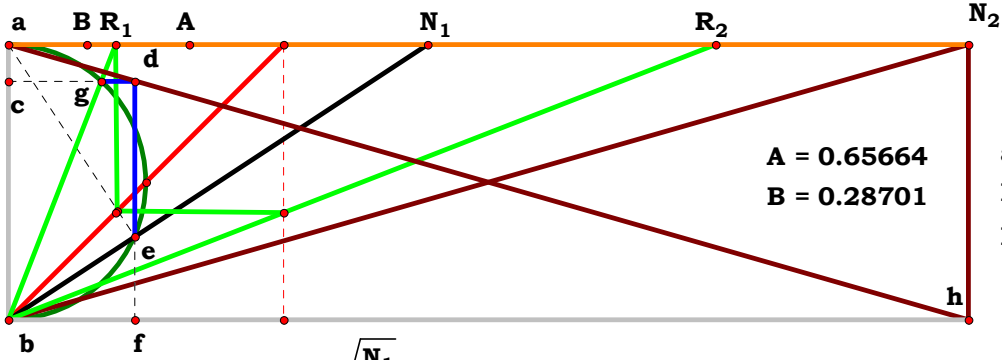
$R_1 = 0.38943$

Definitions.

$$R_1 - \frac{\sqrt{N_1}}{\sqrt{N_1^2 \cdot N_2 - N_1 + N_2}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{\sqrt{A \cdot B}}{\sqrt{(A^2 - B \cdot A + 1)}} = 0$$



$A = 0.65664$   
 $B = 0.28701$

$ab = 1.00000$   
 $N_1 = 1.52291$   
 $N_2 = 3.48416$

$R_1 = 0.38943$

$$\frac{\sqrt{N_1}}{\sqrt{(N_1^2 \cdot N_2 - N_1) + N_2}} = 0.38943$$

$$\frac{\sqrt{A \cdot B}}{\sqrt{(A^2 - A \cdot B) + 1}} = 0.38943$$

$R_2 = 2.56786$

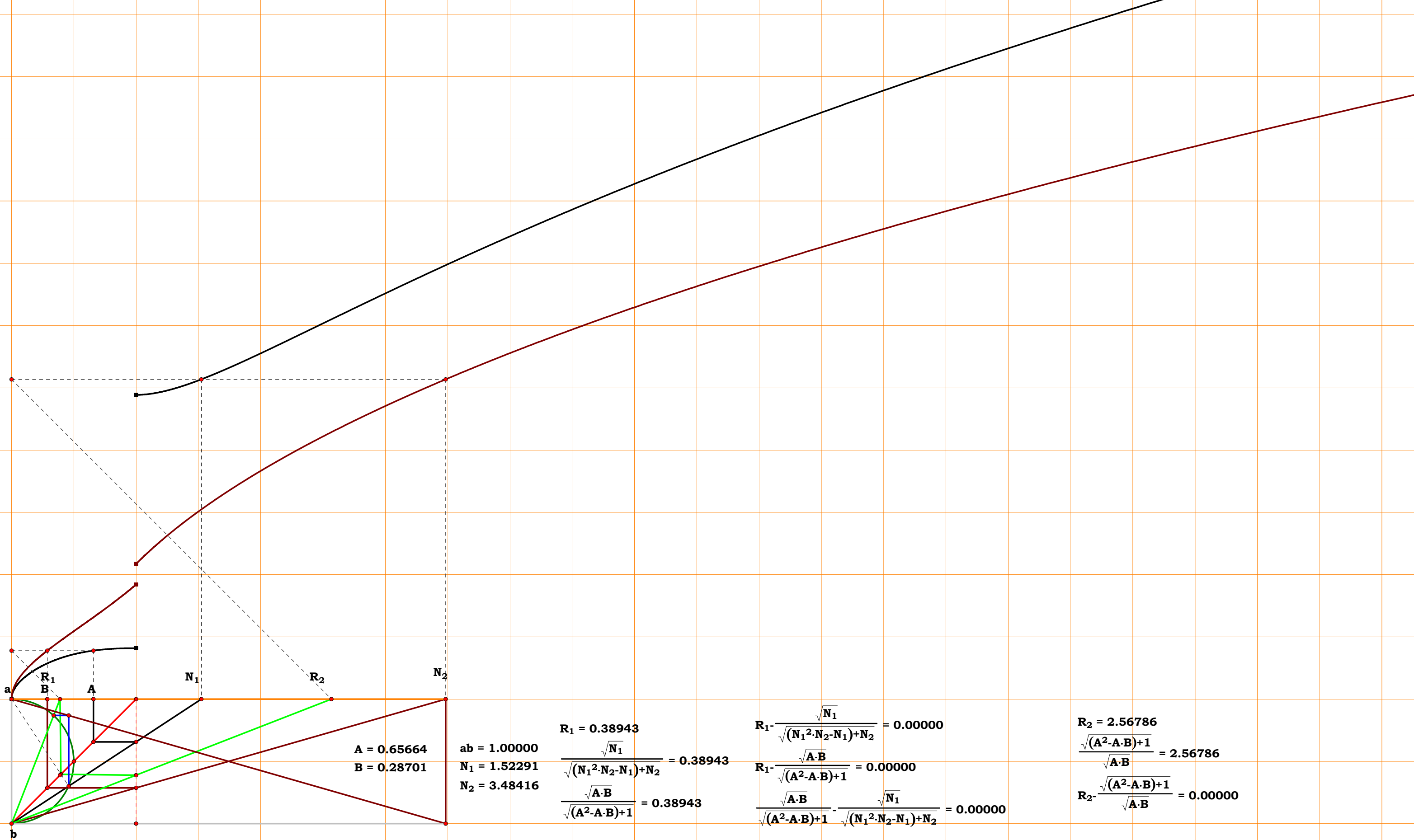
$$\frac{\sqrt{(A^2 - A \cdot B) + 1}}{\sqrt{A \cdot B}} = 2.56786$$

$$R_2 - \frac{\sqrt{(A^2 - A \cdot B) + 1}}{\sqrt{A \cdot B}} = 0.00000$$

$$R_1 - \frac{\sqrt{N_1}}{\sqrt{(N_1^2 \cdot N_2 - N_1) + N_2}} = 0.00000$$

$$R_1 - \frac{\sqrt{A \cdot B}}{\sqrt{(A^2 - A \cdot B) + 1}} = 0.00000$$

$$\frac{\sqrt{A \cdot B}}{\sqrt{(A^2 - A \cdot B) + 1}} - \frac{\sqrt{N_1}}{\sqrt{(N_1^2 \cdot N_2 - N_1) + N_2}} = 0.00000$$



**2SMT3R3**

**Unit.    $\mathbf{ab} := 1$     $\mathbf{N}_1 := 3.42154$**

$$\mathbf{N}_2 := 1.65047 \quad \mathbf{N}_3 := 2.26617$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

### Descriptions.

$$\mathbf{bd} := \frac{N_2}{N_1 + N_2} \quad \mathbf{ad} := \frac{N_1}{N_1 + N_2}$$

$$\mathbf{df} := \sqrt{\mathbf{bd} \cdot \mathbf{ad}} \quad \mathbf{aj} := \frac{\mathbf{df}}{\mathbf{bd}} \quad \mathbf{ac} := \frac{\mathbf{aj}}{\mathbf{aj} + \mathbf{N}_3}$$

$$\mathbf{CE} := \sqrt{\mathbf{ac} \cdot (\mathbf{1} - \mathbf{ac})} \quad \mathbf{R}_1 := \frac{\mathbf{CE}}{\mathbf{ac}}$$

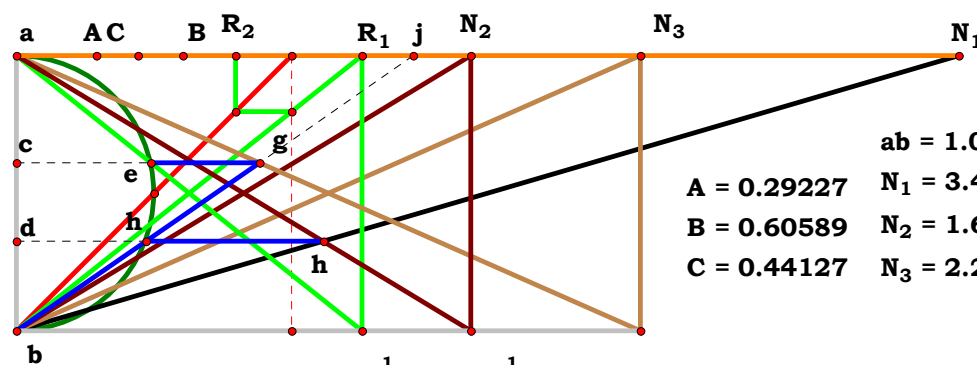
$$\mathbf{R}_1 = 1.254564 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

### Definitions.

$$R_1 - \frac{N_2 \cdot (N_1 \cdot N_3)^{\frac{1}{2}} \cdot (N_1 \cdot N_2)^{\frac{1}{4}}}{N_1 \cdot N_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$R_1 - \frac{A \cdot B}{\frac{1}{B \cdot (A \cdot C)^2 \cdot (A \cdot B)^4}} = 0 \quad R_2 - \frac{B \cdot (A \cdot C)^2 \cdot (A \cdot B)^4}{A \cdot B} = 0$$



$$R_1 - \frac{N_2 \cdot (N_1 \cdot N_3)^{\frac{1}{2}} \cdot (N_1 \cdot N_2)^{\frac{1}{4}}}{N_1 \cdot N_2} = 0.00000$$

$$R_1 - \frac{(A \cdot B)}{\left( \frac{B \cdot (A \cdot C)}{2} \cdot \frac{(A \cdot B)}{4} \right)} = 0.00000$$

$$\frac{(A \cdot B)}{\left( \frac{B \cdot (A \cdot C)}{N_1 \cdot N_2} \right)^{\frac{1}{2}} \cdot (A \cdot B)^{\frac{1}{4}}} - \frac{N_2 \cdot (N_1 \cdot N_3)^{\frac{1}{2}} \cdot (N_1 \cdot N_2)^{\frac{1}{4}}}{N_1 \cdot N_2} = 0.00000$$

$$R_1 = 1.25456$$

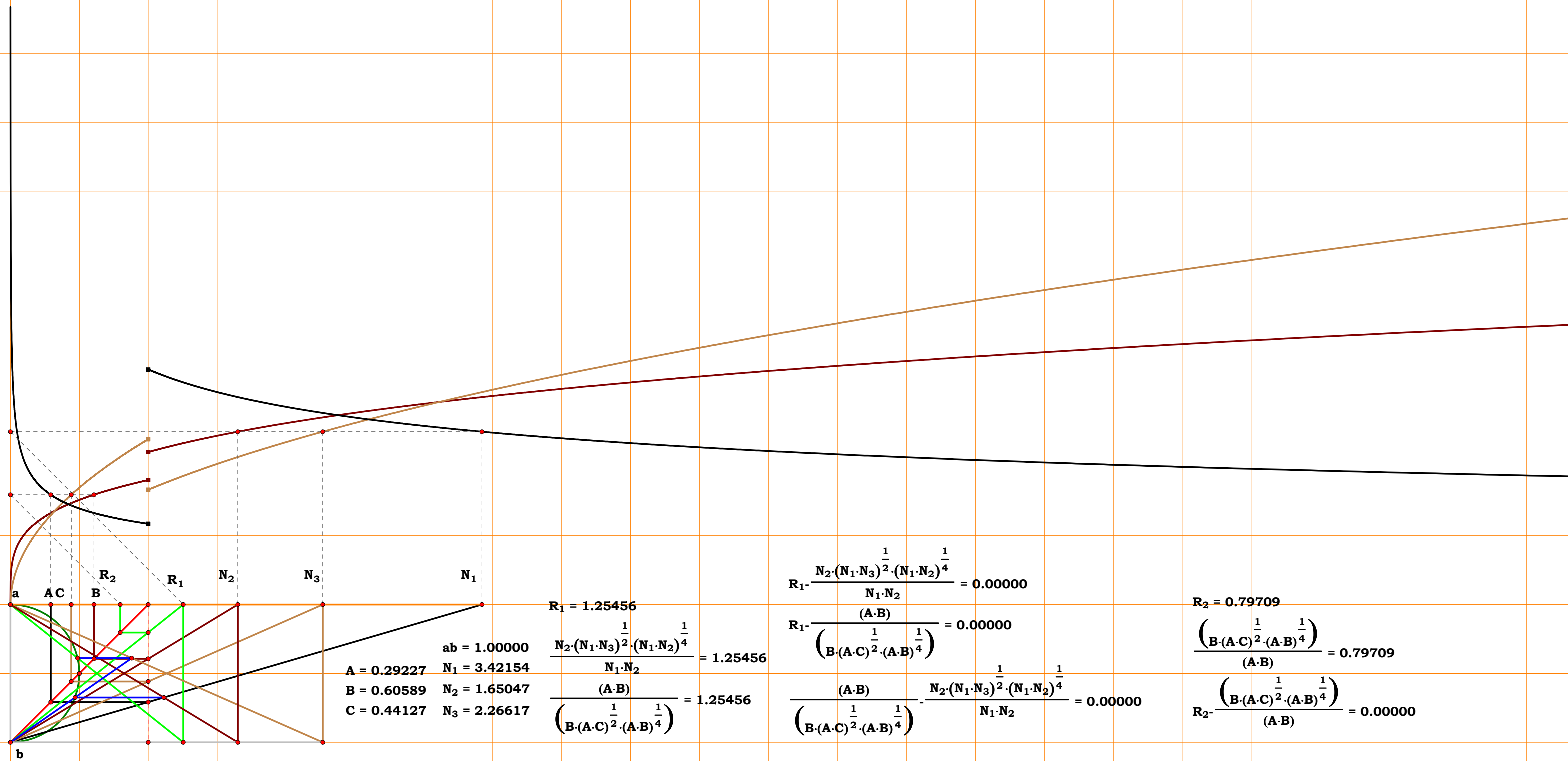
$$\frac{N_2 \cdot (N_1 \cdot N_3)^{\frac{1}{2}} \cdot (N_1 \cdot N_2)^{\frac{1}{4}}}{N_1 \cdot N_2} = 1.25456$$

$$\frac{(A \cdot B)}{\left( B \cdot (A \cdot C)^{\frac{1}{2}} \cdot (A \cdot B)^{\frac{1}{4}} \right)} = 1.25456$$

$$R_2 = 0.79709$$

$$\frac{\left( \mathbf{B} \cdot (\mathbf{A} \cdot \mathbf{C})^{\frac{1}{2}} \cdot (\mathbf{A} \cdot \mathbf{B})^{\frac{1}{4}} \right)}{(\mathbf{A} \cdot \mathbf{B})} = 0.79709$$

$$R_2 - \frac{\left( B \cdot (A \cdot C)^{\frac{1}{2}} \cdot (A \cdot B)^{\frac{1}{4}} \right)}{(A \cdot B)} = 0.00000$$



**2SMT3R4**

Unit.  $\mathbf{ab} := 1$ 

$$\mathbf{N}_1 := 3.25819 \quad \mathbf{N}_2 := 2.58176$$

$$N_3 := 1.48494 \quad N_4 := 1.62547$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3} \quad \mathbf{D} := \frac{1}{N_4}$$

### Descriptions.

$$\mathbf{be} := \frac{N_2}{N_2 + N_1} \quad \mathbf{eh} := \sqrt{\mathbf{be} \cdot (1 - \mathbf{be})} \quad \mathbf{ak} := \frac{\mathbf{eh}}{\mathbf{be}}$$

$$\mathbf{bd} := \frac{\mathbf{N}_3}{\mathbf{ak} + \mathbf{N}_3} \quad \mathbf{dg} := \sqrt{\mathbf{bd} \cdot (1 - \mathbf{bd})} \quad \mathbf{aj} := \frac{\mathbf{dg}}{\mathbf{bd}}$$

$$\mathbf{bc} := \frac{\mathbf{N}_4}{\mathbf{aj} + \mathbf{N}_4} \quad \mathbf{cf} := \sqrt{\mathbf{bc} \cdot (1 - \mathbf{bc})} \quad \mathbf{R}_1 := \frac{\mathbf{cf}}{1 - \mathbf{bc}}$$

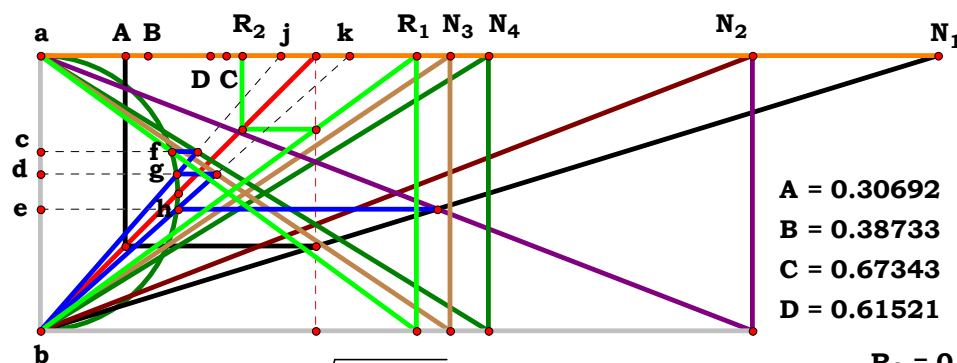
$$\mathbf{R}_1 = 1.367049 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

### Definitions.

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot \mathbf{N}_4}}{(\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot \sqrt{\mathbf{N}_1 \cdot \mathbf{N}_2})^{\frac{1}{4}}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A} \cdot \mathbf{B})^{\frac{1}{8}} \cdot (\mathbf{B} \cdot \mathbf{C})^{\frac{1}{4}}}{\sqrt{\mathbf{B} \cdot \mathbf{C} \cdot \mathbf{D}}} = 0 \quad \mathbf{R}_2 - \frac{\sqrt{\mathbf{B} \cdot \mathbf{C} \cdot \mathbf{D}}}{(\mathbf{A} \cdot \mathbf{B})^{\frac{1}{8}} \cdot (\mathbf{B} \cdot \mathbf{C})^{\frac{1}{4}}} = 0$$



$$R_1 - \frac{\sqrt{N_2 \cdot N_3 \cdot N_4}}{1} = 0.00000$$

$$\mathbf{R_1 - \frac{(N_2 \cdot N_3 \cdot \sqrt{N_1 \cdot N_2})^{\frac{1}{4}}}{((A \cdot B)^{\frac{1}{8}} \cdot (B \cdot C)^{\frac{1}{4}})} = 0.00000}$$

$$\frac{\left(\frac{1}{(\mathbf{A} \cdot \mathbf{B})^8} \cdot \frac{1}{(\mathbf{B} \cdot \mathbf{C})^4}\right)}{\sqrt{\mathbf{B} \cdot \mathbf{C} \cdot \mathbf{D}}} - \frac{\sqrt{\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot \mathbf{N}_4}}{(\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot \sqrt{\mathbf{N}_1 \cdot \mathbf{N}_2})^{\frac{1}{4}}} = \mathbf{0.00000}$$

$$R_2 = 0.73150$$

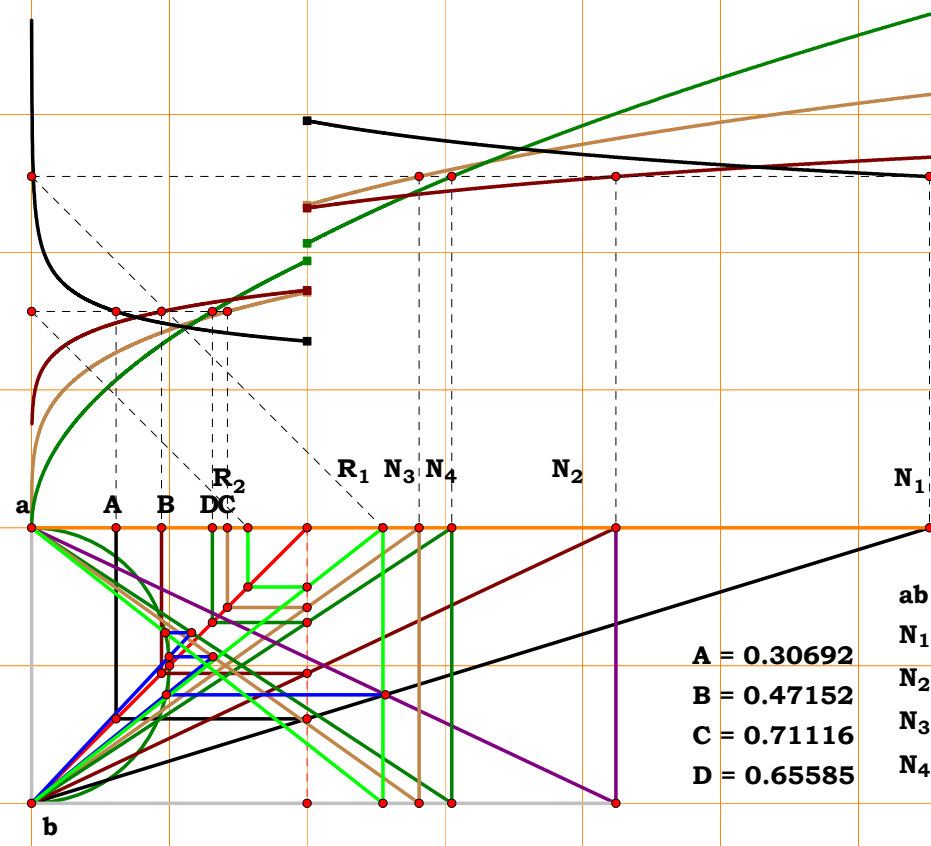
$$\frac{\sqrt{\mathbf{B.C.D}}}{\left( (\mathbf{A.B})^{\frac{1}{8}} . (\mathbf{B.C})^{\frac{1}{4}} \right)} = 0.73150$$

$$R_2 - \frac{\sqrt{B \cdot C \cdot D}}{\left( (A \cdot B)^{\frac{1}{8}} \cdot (B \cdot C)^{\frac{1}{4}} \right)} = 0.00000$$

$$\mathbf{R}_1 = 1.36705$$

$$\frac{\sqrt{N_2 \cdot N_3 \cdot N_4}}{1} = 1.36705$$

$$\frac{\left( \frac{N_2 \cdot N_3 \cdot \sqrt{N_1 \cdot N_2}}{(A \cdot B)^{\frac{1}{8}} \cdot (B \cdot C)^{\frac{1}{4}}} \right)^{\frac{1}{4}}}{\sqrt{B \cdot C \cdot D}} = 1.36705$$



**A = 0.30692**  
**B = 0.47152**  
**C = 0.71116**  
**D = 0.65585**

**ab = 1.00000**  
**N<sub>1</sub> = 3.25819**  
**N<sub>2</sub> = 2.12082**  
**N<sub>3</sub> = 1.40615**  
**N<sub>4</sub> = 1.52474**

$$\begin{aligned}
 R_1 &= 1.27437 \\
 \frac{\sqrt{N_2 \cdot N_3 \cdot N_4}}{\sqrt{N_2 \cdot N_3 \cdot N_1 \cdot N_2}^{\frac{1}{4}}} &= 1.27437 \\
 \frac{\left( \frac{1}{(A \cdot B)^8 \cdot (B \cdot C)^4} \right)^{\frac{1}{4}}}{\sqrt{B \cdot C \cdot D}} &= 1.27437
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{\sqrt{N_2 \cdot N_3 \cdot N_4}}{\left( N_2 \cdot N_3 \cdot \sqrt{N_1 \cdot N_2} \right)^{\frac{1}{4}}} &= 0.00000 \\
 R_1 - \frac{\left( \frac{1}{(A \cdot B)^8 \cdot (B \cdot C)^4} \right)^{\frac{1}{4}}}{\sqrt{B \cdot C \cdot D}} &= 0.00000 \\
 \frac{\left( \frac{1}{(A \cdot B)^8 \cdot (B \cdot C)^4} \right)^{\frac{1}{4}}}{\sqrt{B \cdot C \cdot D}} - \frac{\sqrt{N_2 \cdot N_3 \cdot N_4}}{\left( N_2 \cdot N_3 \cdot \sqrt{N_1 \cdot N_2} \right)^{\frac{1}{4}}} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.78470 \\
 \frac{\sqrt{B \cdot C \cdot D}}{\left( \frac{1}{(A \cdot B)^8 \cdot (B \cdot C)^4} \right)^{\frac{1}{4}}} &= 0.78470 \\
 R_2 - \frac{\sqrt{B \cdot C \cdot D}}{\left( \frac{1}{(A \cdot B)^8 \cdot (B \cdot C)^4} \right)^{\frac{1}{4}}} &= 0.00000
 \end{aligned}$$



2SMT3R5

Given.

Unit.  $ab := 1$

$N_1 := 2.74360$     $N_2 := 1.99835$

$N_3 := 1.37955$     $N_4 := 2.34347$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$be := \frac{N_2}{N_1 + N_2}$     $eh := \sqrt{be \cdot (1 - be)}$     $ak := \frac{eh}{be}$

$bd := \frac{N_3}{ak + N_3}$     $dg := \sqrt{bd \cdot (1 - bd)}$     $aj := \frac{dg}{bd}$

$bc := \frac{N_4}{aj + N_4}$     $cf := \sqrt{bc \cdot (1 - bc)}$     $R_1 := \frac{cf}{bc}$

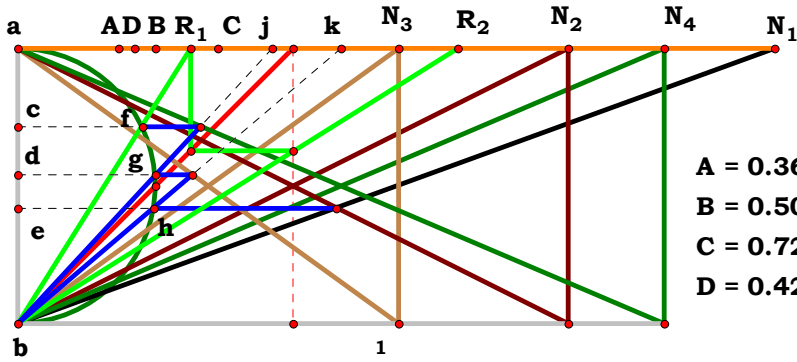
$R_1 = 0.627108$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} = 0 \quad R_2 - \frac{(A \cdot B)^{\frac{1}{8}}}{(B \cdot C \cdot D^2)^{\frac{1}{4}}} = 0$$



A = 0.36448  
B = 0.50041  
C = 0.72487  
D = 0.42672

$$R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.00000$$

$$R_1 - \frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} = 0.00000$$

$$\frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} - \frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.00000$$

$R_1 = 0.62711$

$$\frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.62711$$

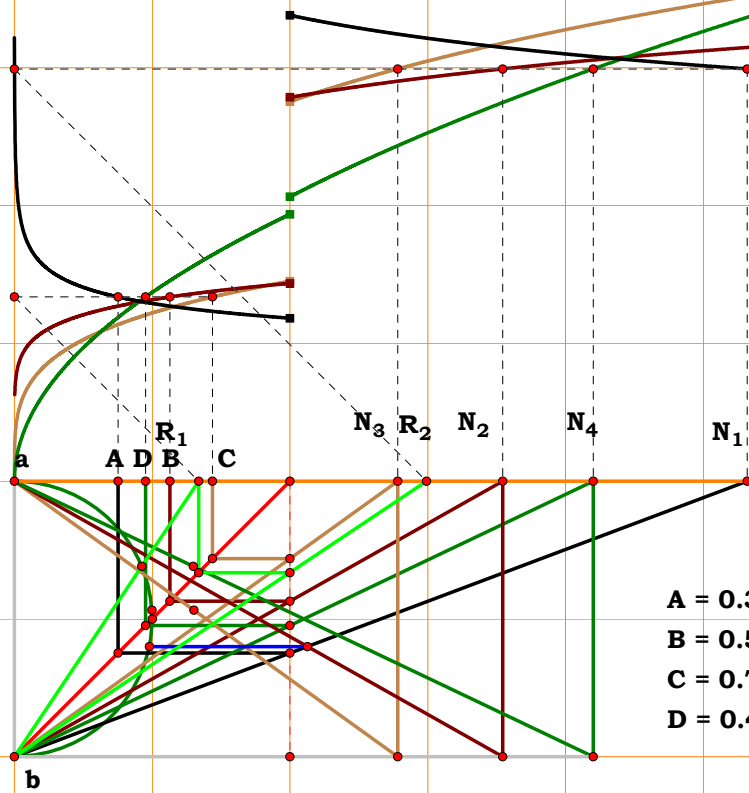
$$\frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} = 0.62711$$

ab = 1.00000  
 $N_1 = 2.74360$   
 $N_2 = 1.99835$   
 $N_3 = 1.37955$   
 $N_4 = 2.34347$

$R_2 = 1.59462$

$$\frac{(A \cdot B)^{\frac{1}{8}}}{(B \cdot C \cdot D^2)^{\frac{1}{4}}} = 1.59462$$

$$R_2 - \frac{(A \cdot B)^{\frac{1}{8}}}{(B \cdot C \cdot D^2)^{\frac{1}{4}}} = 0.00000$$



**A = 0.37610**  
**B = 0.56428**  
**C = 0.71907**  
**D = 0.47607**

**ab = 1.00000**  
**N<sub>1</sub> = 2.65890**  
**N<sub>2</sub> = 1.77218**  
**N<sub>3</sub> = 1.39069**  
**N<sub>4</sub> = 2.10054**

$$R_1 = 0.66842$$

$$\frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.66842$$

$$\frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} = 0.66842$$

$$R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.00000$$

$$R_1 - \frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} = 0.00000$$

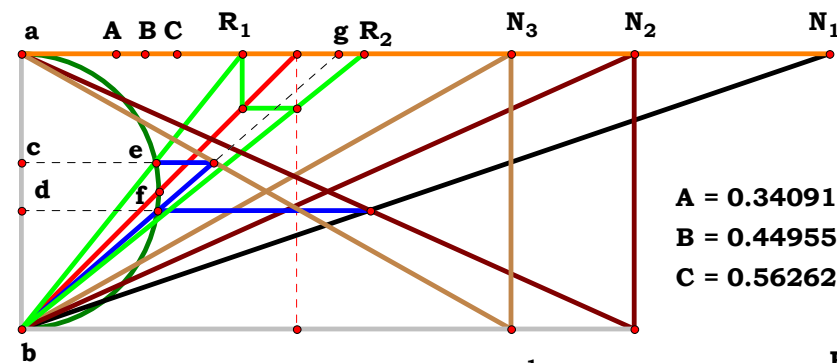
$$\frac{(B \cdot C \cdot D^2)^{\frac{1}{4}}}{(A \cdot B)^{\frac{1}{8}}} - \frac{(N_1 \cdot N_2)^{\frac{1}{8}}}{(N_2 \cdot N_3 \cdot N_4^2)^{\frac{1}{4}}} = 0.00000$$

$$R_2 = 1.49606$$

$$\frac{(A \cdot B)^{\frac{1}{8}}}{(B \cdot C \cdot D^2)^{\frac{1}{4}}} = 1.49606$$

$$R_2 - \frac{(A \cdot B)^{\frac{1}{8}}}{(B \cdot C \cdot D^2)^{\frac{1}{4}}} = 0.00000$$

**2SMT3R6**

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{B} \cdot \mathbf{C}}}{(\mathbf{A} \cdot \mathbf{B})^{\frac{1}{4}}} = 0 \quad \mathbf{R}_2 - \frac{(\mathbf{A} \cdot \mathbf{B})^{\frac{1}{4}}}{\sqrt{\mathbf{B} \cdot \mathbf{C}}} = 0$$


**A = 0.34091**  
**B = 0.44955**  
**C = 0.56262**

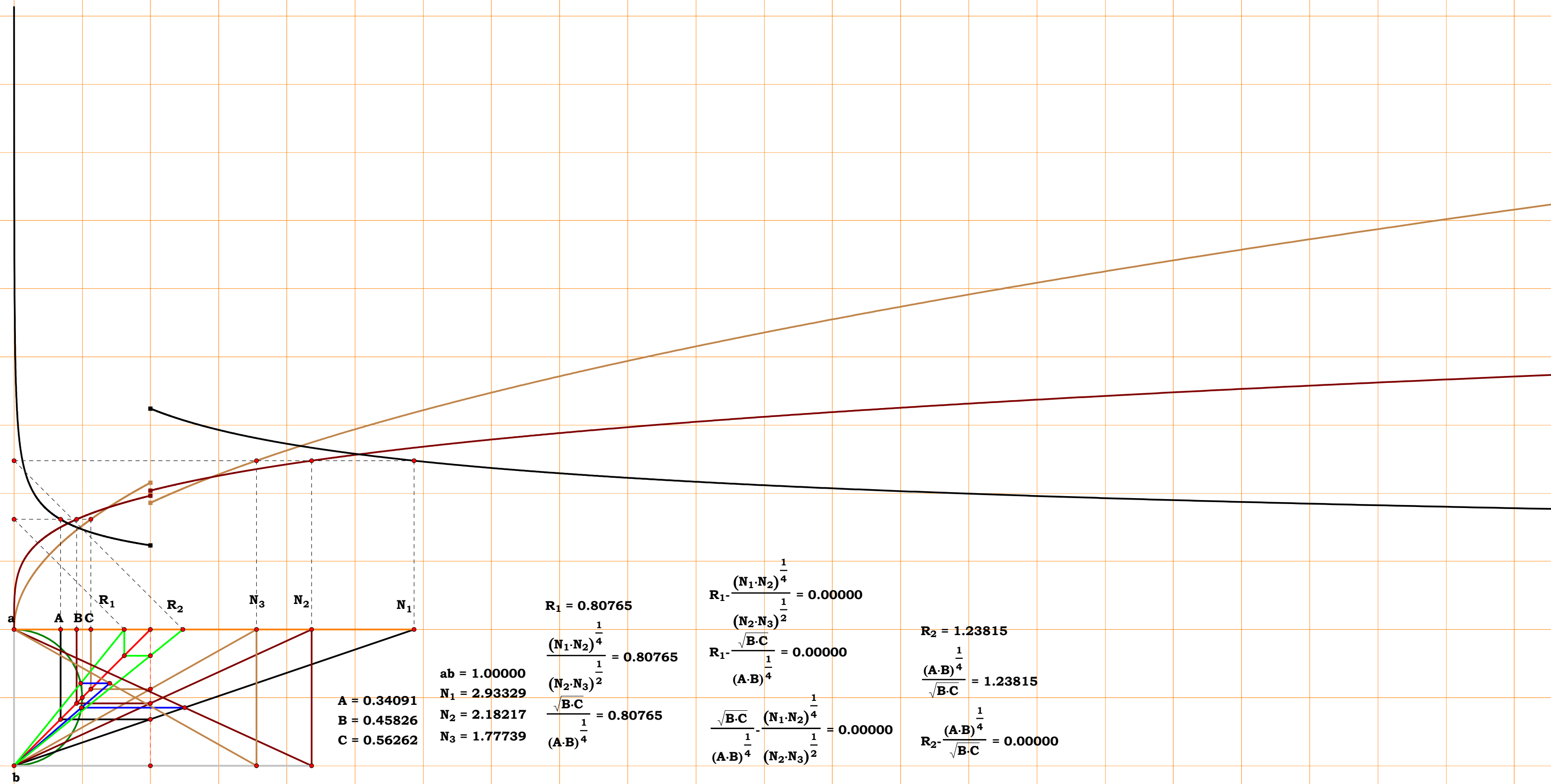
**ab = 1.00000**  
**N<sub>1</sub> = 2.93329**  
**N<sub>2</sub> = 2.22444**  
**N<sub>3</sub> = 1.77739**

$$\frac{\frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} \cdot \frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}}}{R_1} = 0.80379$$

$$\frac{(A \cdot B)^{\frac{1}{4}}}{\sqrt{B \cdot C}} = 1.24411$$

$$R_2 - \frac{(A \cdot B)^{\frac{1}{4}}}{\sqrt{B \cdot C}} = 0.00000$$

$$\begin{aligned} R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} &= 0.00000 \\ R_1 - \frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}} &= 0.00000 \\ \frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}} - \frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} &= 0.00000 \end{aligned}$$



**A = 0.34091**  
**B = 0.45826**  
**C = 0.56262**

**ab = 1.00000**  
**N<sub>1</sub> = 2.93329**  
**N<sub>2</sub> = 2.18217**  
**N<sub>3</sub> = 1.77739**

**R<sub>1</sub> = 0.80765**  

$$\frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} = 0.80765$$

$$\frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}} = 0.80765$$

$$R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} = 0.00000$$

$$R_1 - \frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}} = 0.00000$$

$$\frac{\sqrt{B \cdot C}}{(A \cdot B)^{\frac{1}{4}}} - \frac{(N_1 \cdot N_2)^{\frac{1}{4}}}{(N_2 \cdot N_3)^{\frac{1}{2}}} = 0.00000$$

**R<sub>2</sub> = 1.23815**  

$$\frac{(A \cdot B)^{\frac{1}{4}}}{\sqrt{B \cdot C}} = 1.23815$$

$$R_2 - \frac{(A \cdot B)^{\frac{1}{4}}}{\sqrt{B \cdot C}} = 0.00000$$



**Given.**

**Unit.**  $ab := 1$   $N_1 := 2.65683$

$$\mathbf{N}_2 := 1.40528 \quad \mathbf{N}_3 := 2.10874$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

## Descriptions.

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bd} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{be} := \mathbf{N}_1 \cdot \frac{\mathbf{bd}}{\mathbf{bN}_1}$$

$$\mathbf{ce} := \frac{\mathbf{N}_2 - \mathbf{be}}{\mathbf{N}_2} \quad \mathbf{R}_1 := \mathbf{N}_3 \cdot \mathbf{ce}$$

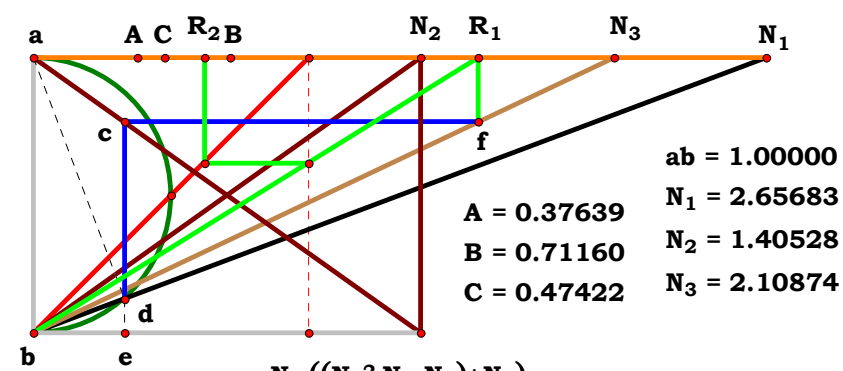
$$\mathbf{R}_1 = 1.614023 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

### Definitions.

$$\mathbf{R}_1 - \frac{\mathbf{N}_3 \cdot (\mathbf{N}_1^2 \cdot \mathbf{N}_2 - \mathbf{N}_1 + \mathbf{N}_2)}{\mathbf{N}_2 \cdot (\mathbf{N}_1^2 + 1)} = \mathbf{0}$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \qquad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \qquad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 - \mathbf{A} \cdot \mathbf{B} + 1)}{\mathbf{C} \cdot (\mathbf{A}^2 + 1)} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{C} \cdot (\mathbf{A}^2 + 1)}{(\mathbf{A}^2 - \mathbf{A} \cdot \mathbf{B} + 1)} = 0$$



$$R_1 - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} = 0.00000$$

$$R_1 - \frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} = 0.00000$$

$$\frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} = 0.00000$$

**ab = 1.00000**

$$N_1 = 2.65683$$

$$N_2 = 1.40528$$

$$N_3 = 2.10874$$

$$\mathbf{R}_1 = 1.61403$$

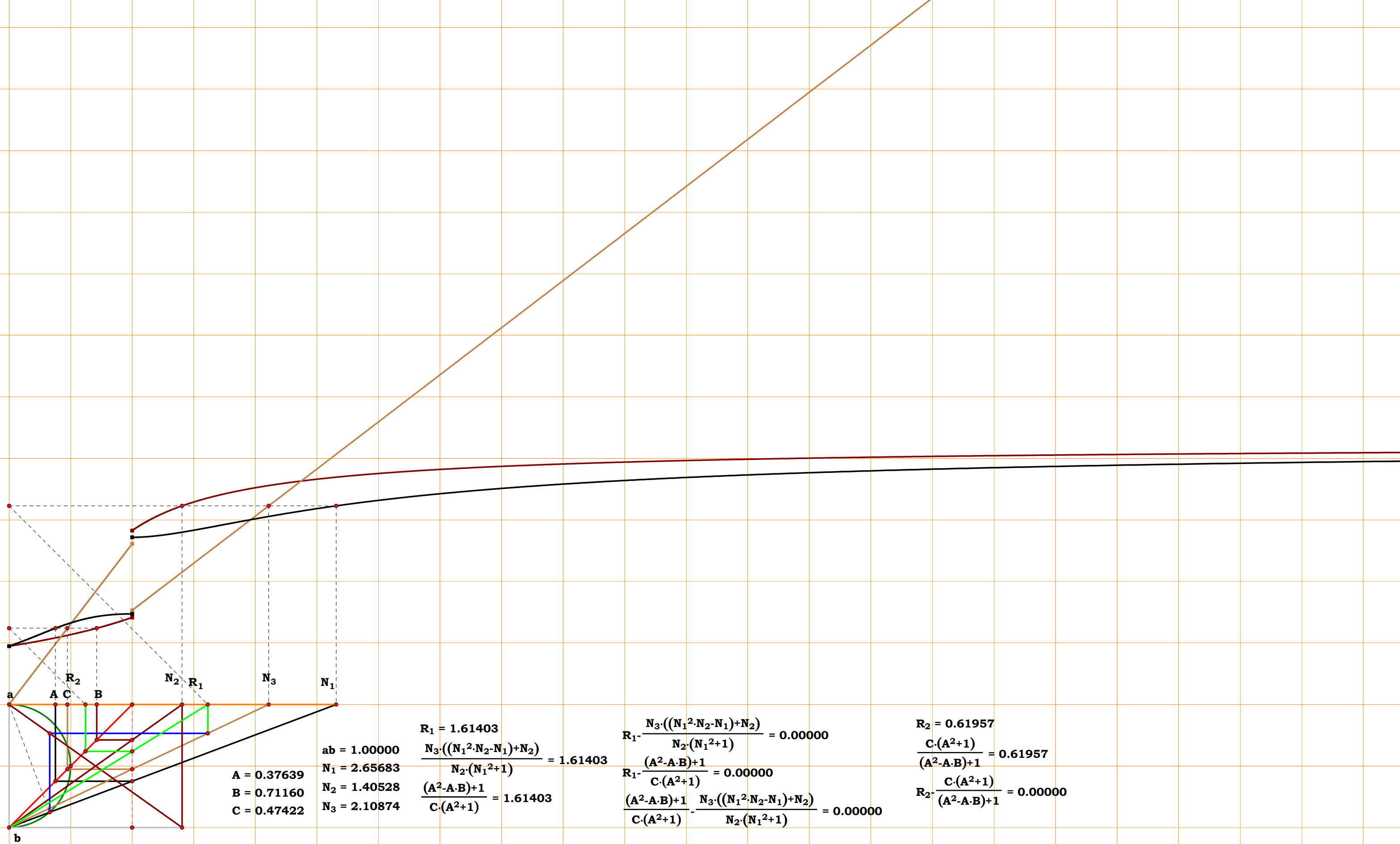
$$\frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} = 1.61403$$

$$\frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} = 1.61403$$

$$\mathbf{R}_2 = 0.61957$$

$$\frac{C \cdot (A^2 + 1)}{(A^2 - A \cdot B) + 1} = 0.61957$$

$$R_2 - \frac{C \cdot (A^2 + 1)}{(A^2 - A \cdot B) + 1} = 0.00000$$



**A = 0.37639**  
**B = 0.71160**  
**C = 0.47422**

**ab = 1.00000**  
**N<sub>1</sub> = 2.65683**  
**N<sub>2</sub> = 1.40528**  
**N<sub>3</sub> = 2.10874**

$$\begin{aligned}
 R_1 &= 1.61403 \\
 \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} &= 1.61403 \\
 \frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} &= 1.61403
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} &= 0.00000 \\
 R_1 - \frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} &= 0.00000 \\
 \frac{(A^2 - A \cdot B) + 1}{C \cdot (A^2 + 1)} - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2 \cdot (N_1^2 + 1)} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.61957 \\
 \frac{C \cdot (A^2 + 1)}{(A^2 - A \cdot B) + 1} &= 0.61957 \\
 R_2 - \frac{C \cdot (A^2 + 1)}{(A^2 - A \cdot B) + 1} &= 0.00000
 \end{aligned}$$



**Given.**

**Unit.**    $ab := 1$

$N_1 := 3.77979$     $N_2 := 1.89657$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$

**Descriptions.**

$fg := \frac{N_2}{N_1 + N_2}$     $cd := \sqrt{fg \cdot (1 - fg)}$

$R_1 := \frac{cd}{fg}$

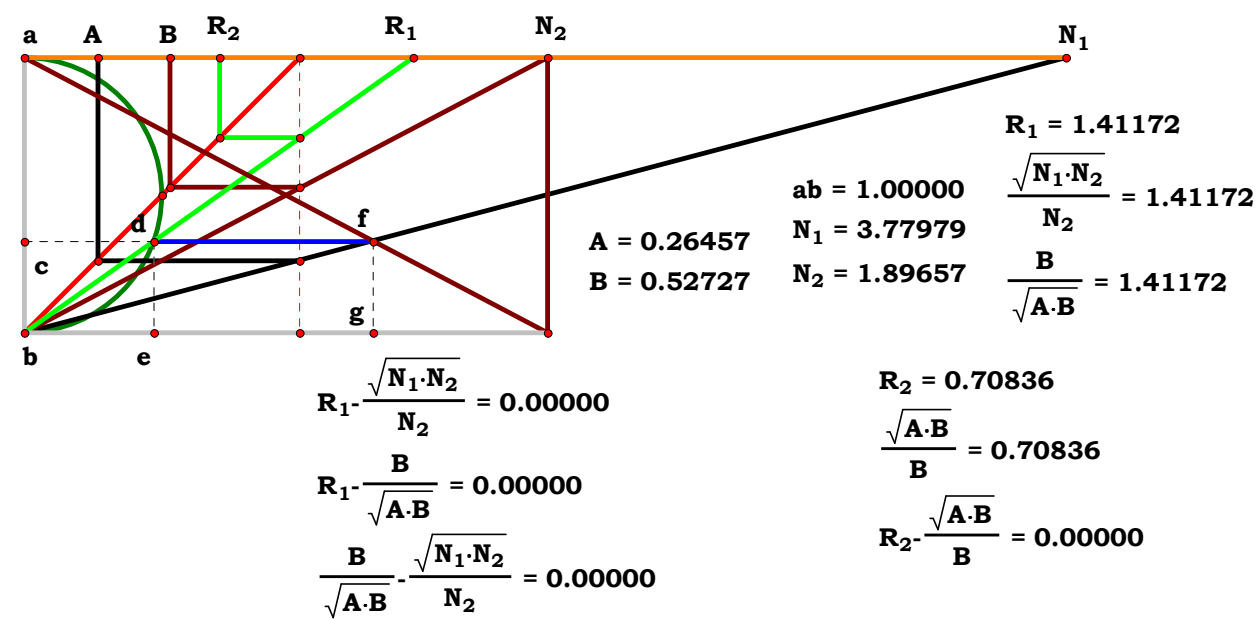
$R_1 = 1.411723$     $R_2 := \frac{1}{R_1}$

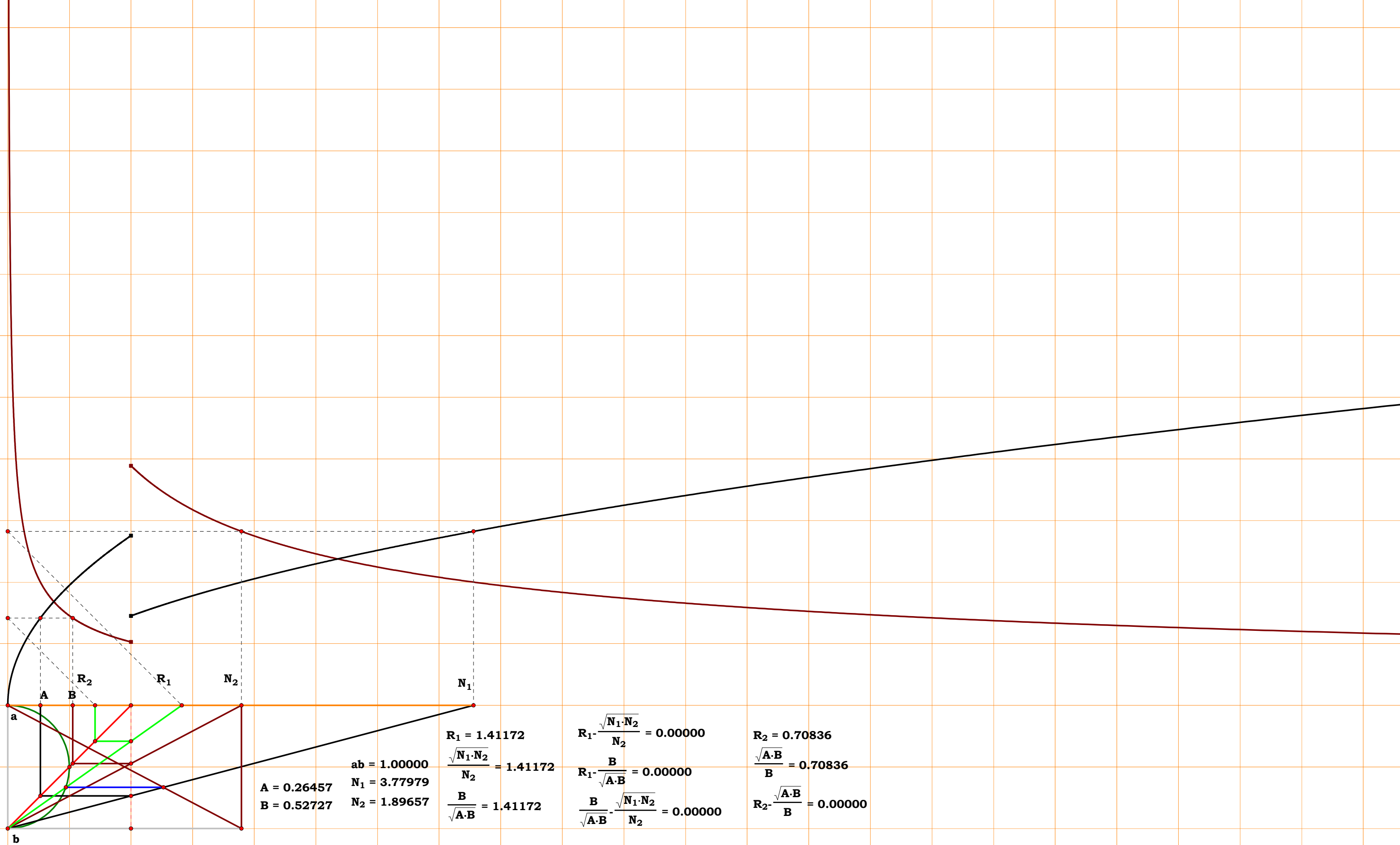
**Definitions.**

$R_1 - \frac{(N_1 \cdot N_2)^{\frac{1}{2}}}{N_2} = 0$

$N_1 - \frac{1}{A} = 0$     $N_2 - \frac{1}{B} = 0$

$R_1 - \frac{B}{\sqrt{A \cdot B}} = 0$     $R_2 - \frac{\sqrt{A \cdot B}}{B} = 0$







Given.

Unit.  $ab := 1 \quad N_1 := 1.52603$

$N_2 := 3.17336 \quad N_3 := 2.19039$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3}$

Descriptions.

$bd := \frac{N_2}{N_1 + N_2} \quad df := \sqrt{bd \cdot (1 - bd)} \quad ac := \frac{df}{N_3}$

$cg := \sqrt{ac \cdot (1 - ac)} \quad R_1 := \frac{cg}{1 - ac}$

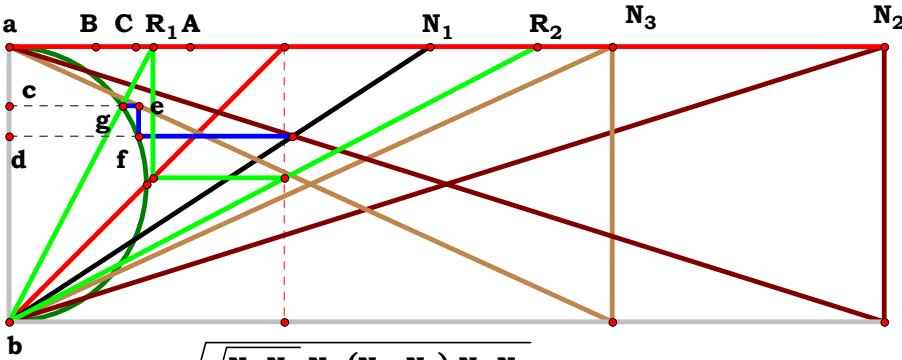
$R_1 = 0.521457 \quad R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 + N_2)} - N_1 \cdot N_2}}{N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2} + N_2 \cdot N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$R_1 - \frac{A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]}}{[\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C] \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}}} = 0 \quad R_2 - \frac{[\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C] \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}}}{A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]}} = 0$$



$$R_1 - \frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 + N_2)} - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]})}{((\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} = 0.00000$$

$$\frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]})}{((\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} - \frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 + N_2)} - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.00000$$

$A = 0.65529$   
 $B = 0.31512$   
 $C = 0.45654$

$ab = 1.00000$   
 $N_1 = 1.52603$   
 $N_2 = 3.17336$   
 $N_3 = 2.19039$

$R_1 = 0.52146$

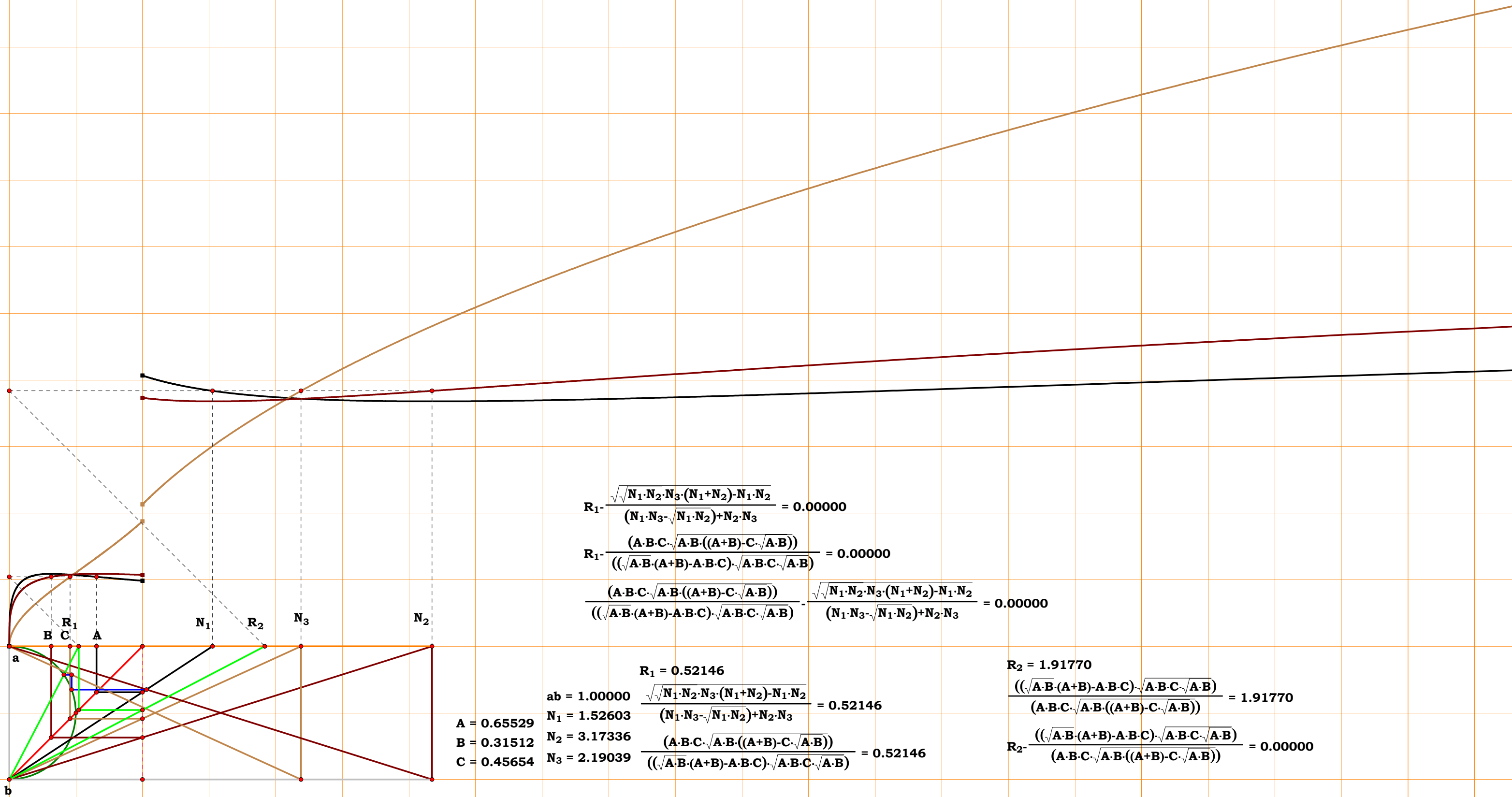
$$\frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 + N_2)} - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.52146$$

$$\frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]})}{((\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} = 0.52146$$

$R_2 = 1.91770$

$$\frac{((\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})}{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]})} = 1.91770$$

$$R_2 - \frac{((\sqrt{A \cdot B \cdot (A + B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})}{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot [(A + B) - C \cdot \sqrt{A \cdot B}]})} = 0.00000$$



**A = 0.65529**  
**B = 0.31512**  
**C = 0.45654**

**ab = 1.00000**  
**N<sub>1</sub> = 1.52603**  
**N<sub>2</sub> = 3.17336**  
**N<sub>3</sub> = 2.19039**

$$R_1 = 0.52146$$

$$\frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3} \cdot (N_1 + N_2) - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.52146$$

$$\frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot ((A+B) - C \cdot \sqrt{A \cdot B})})}{((\sqrt{A \cdot B \cdot (A+B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} = 0.52146$$

**R<sub>2</sub> = 1.91770**

$$\frac{((\sqrt{A \cdot B \cdot (A+B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})}{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot ((A+B) - C \cdot \sqrt{A \cdot B})})} = 1.91770$$

$$R_2 - \frac{((\sqrt{A \cdot B \cdot (A+B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})}{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot ((A+B) - C \cdot \sqrt{A \cdot B})})} = 0.00000$$

$$R_1 - \frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3} \cdot (N_1 + N_2) - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot ((A+B) - C \cdot \sqrt{A \cdot B})})}{((\sqrt{A \cdot B \cdot (A+B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} = 0.00000$$

$$\frac{(A \cdot B \cdot C \cdot \sqrt{A \cdot B \cdot ((A+B) - C \cdot \sqrt{A \cdot B})})}{((\sqrt{A \cdot B \cdot (A+B)} - A \cdot B \cdot C) \cdot \sqrt{A \cdot B \cdot C \cdot \sqrt{A \cdot B}})} - \frac{\sqrt{\sqrt{N_1 \cdot N_2 \cdot N_3} \cdot (N_1 + N_2) - N_1 \cdot N_2}}{(N_1 \cdot N_3 - \sqrt{N_1 \cdot N_2}) + N_2 \cdot N_3} = 0.00000$$



Given.

Unit.  $ab := 1$

$N_1 := 2.10269$      $N_2 := 1.53799$

$N_3 := 3.01318$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$      $bd := \frac{1}{bN_1}$      $be := \frac{N_1 \cdot bd}{bN_1}$

$fN_3 := \frac{be}{N_2}$      $R_1 := \frac{N_3}{1 - fN_3}$

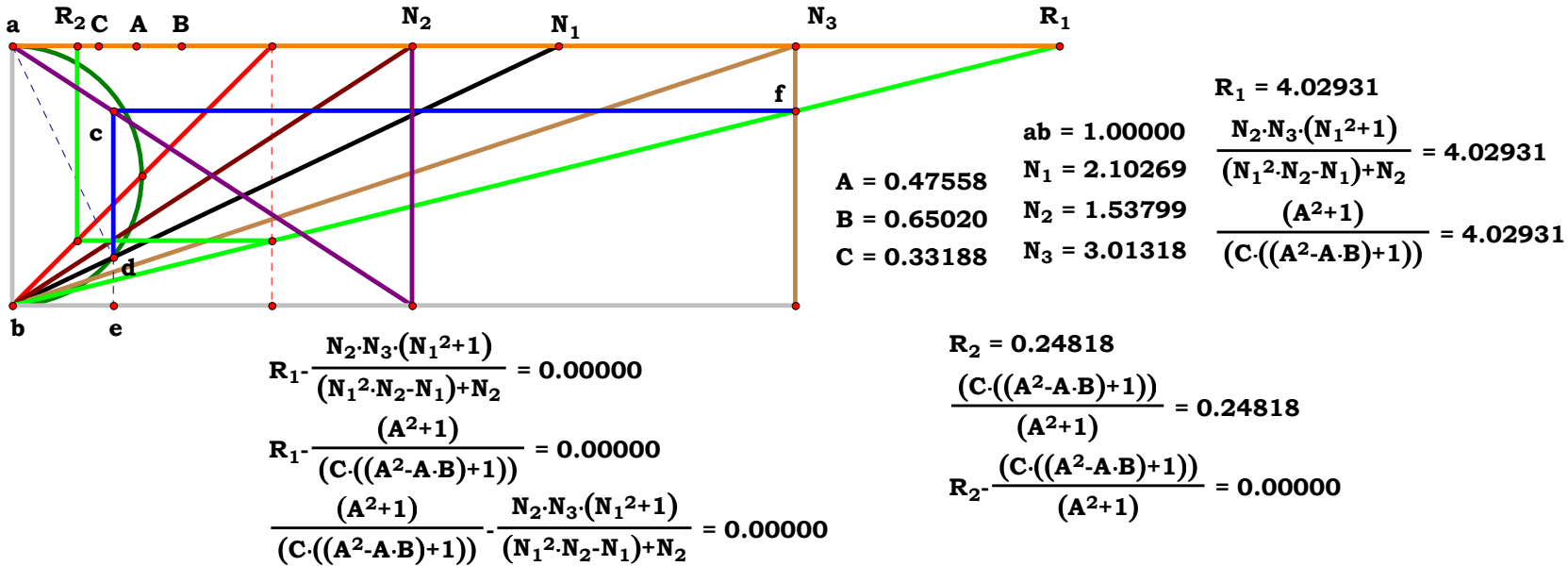
$R_1 = 4.029308$      $R_2 := \frac{1}{R_1}$

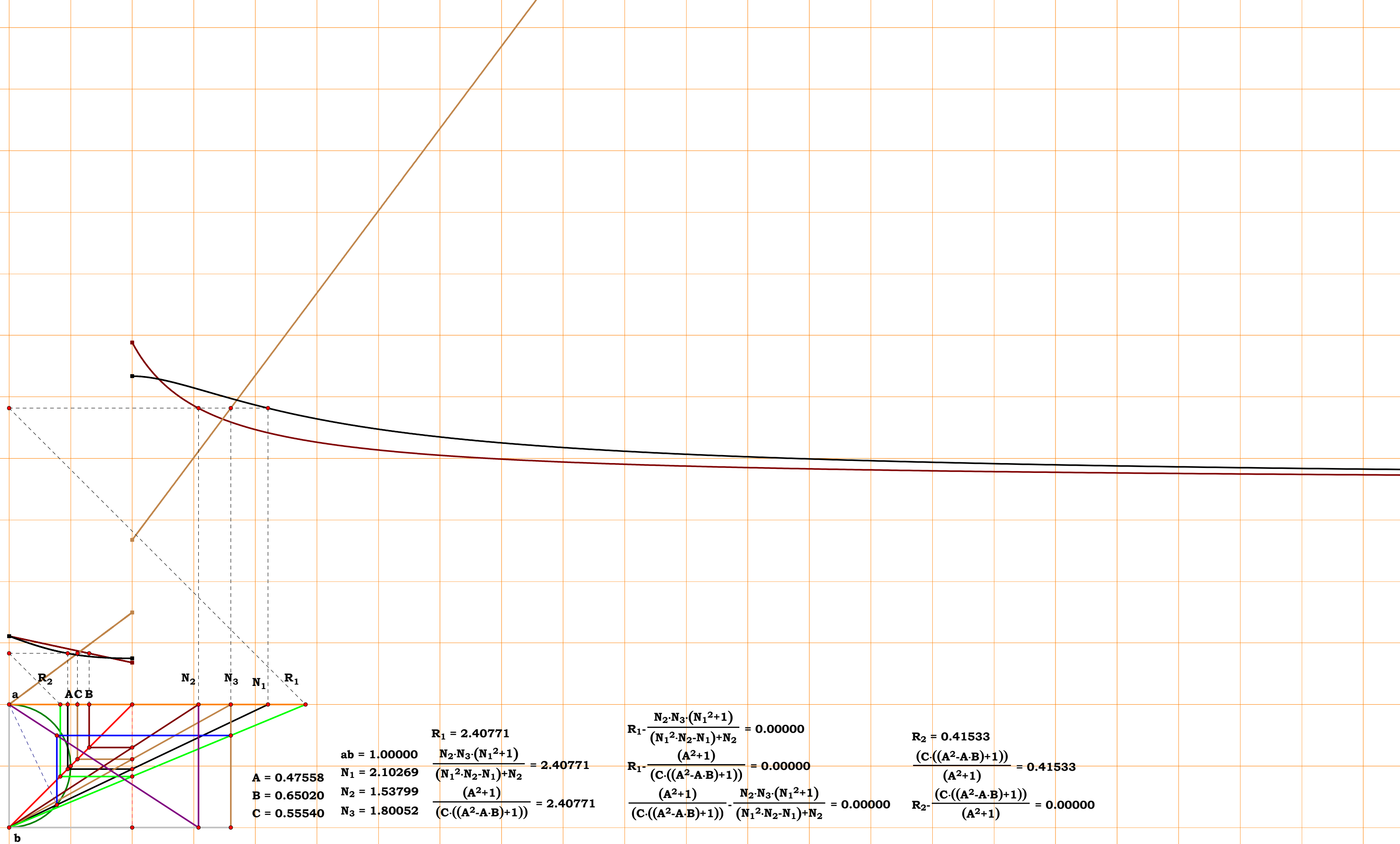
Definitions.

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_2 - N_1 + N_2} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{(A^2 + 1)}{C \cdot (A^2 - B \cdot A + 1)} = 0$      $R_2 - \frac{C \cdot (A^2 - B \cdot A + 1)}{(A^2 + 1)} = 0$







2SMT3R11

Given.

Unit.  $ab := 1$

$N_1 := 1.90071$     $N_2 := 3.62952$

$N_3 := 2.25061$     $N_4 := 1.28209$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$bc := \frac{N_2}{N_1 + N_2}$     $ce := \sqrt{bc \cdot (1 - bc)}$

$fN_4 := \frac{ce}{N_3}$     $R_1 := \frac{N_4}{1 - fN_4}$

$R_1 = 1.625012$     $R_2 := \frac{1}{R_1}$

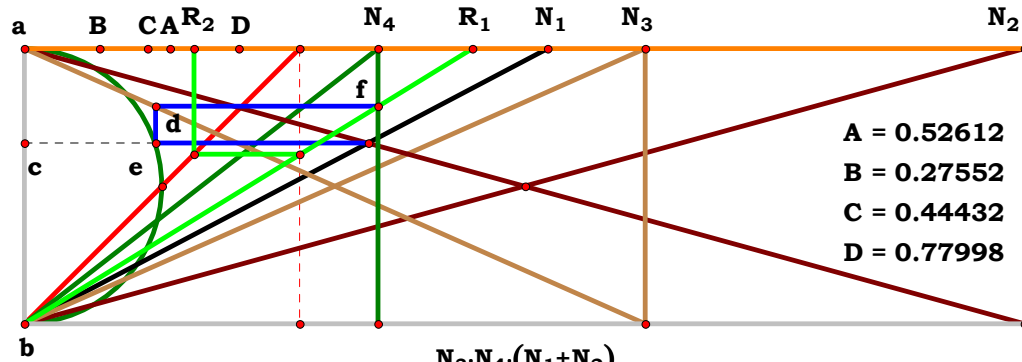
Definitions.

$R_1 - \frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 0$

$N_1 - \frac{1}{A} = 0$     $N_2 - \frac{1}{B} = 0$

$N_3 - \frac{1}{C} = 0$     $N_4 - \frac{1}{D} = 0$

$R_1 - \frac{(A+B) \cdot \sqrt{A \cdot B}}{D \cdot [\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C]} = 0$     $R_2 - \frac{D \cdot [\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C]}{(A+B) \cdot \sqrt{A \cdot B}} = 0$



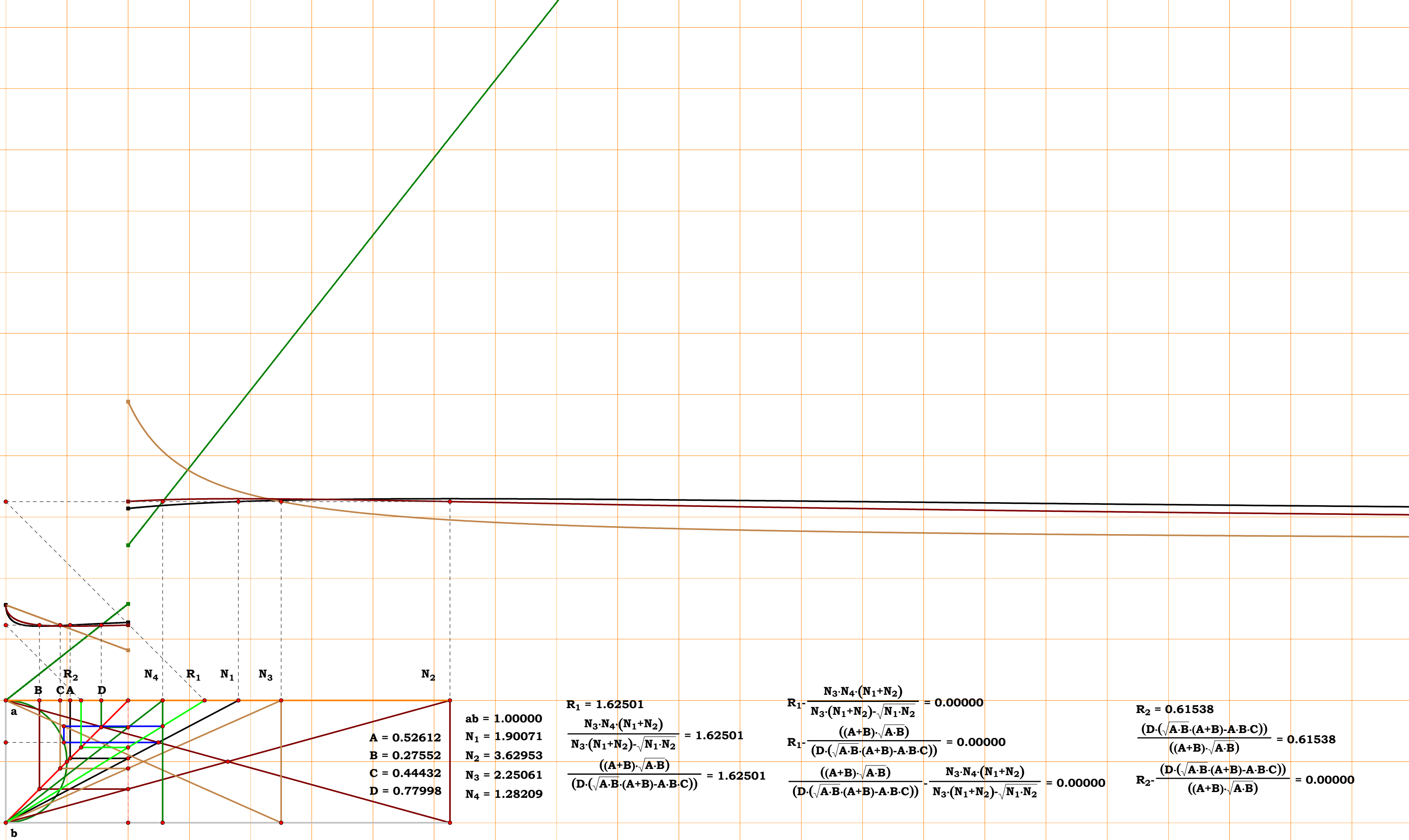
$A = 0.52612$   
 $B = 0.27552$   
 $C = 0.44432$   
 $D = 0.77998$

$ab = 1.00000$   
 $N_1 = 1.90071$   
 $N_2 = 3.62953$   
 $N_3 = 2.25061$   
 $N_4 = 1.28209$

$R_1 = 1.62501$   
 $\frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 1.62501$   
 $\frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} = 1.62501$

$R_2 = 0.61538$   
 $\frac{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))}{((A+B) \cdot \sqrt{A \cdot B})} = 0.61538$   
 $R_2 - \frac{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))}{((A+B) \cdot \sqrt{A \cdot B})} = 0.00000$

$R_1 - \frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 0.00000$   
 $R_1 - \frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} = 0.00000$   
 $\frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} - \frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 0.00000$



$$R_1 = 1.62501$$

$$\frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 1.62501$$

$$\frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} = 1.62501$$

$$R_1 - \frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_1 - \frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} = 0.00000$$

$$\frac{((A+B) \cdot \sqrt{A \cdot B})}{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))} - \frac{N_3 \cdot N_4 \cdot (N_1 + N_2)}{N_3 \cdot (N_1 + N_2) - \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_2 = 0.61538$$

$$\frac{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))}{((A+B) \cdot \sqrt{A \cdot B})} = 0.61538$$

$$R_2 - \frac{(D \cdot (\sqrt{A \cdot B} \cdot (A+B) - A \cdot B \cdot C))}{((A+B) \cdot \sqrt{A \cdot B})} = 0.00000$$



2SMT4R0

Given.

Unit.  $ab := 1$   $N_1 := 2.46754$

$N_2 := 1.92097$   $N_3 := 1.28674$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$   $bd := \frac{1}{bN_1}$   $be := \frac{N_1 \cdot bd}{bN_1}$

$ce := \frac{be}{N_3}$   $bj := \frac{N_2}{1 - ce}$   $aj := \sqrt{1 + bj^2}$

$af := \frac{1}{aj}$   $R_1 := \frac{bj \cdot af}{aj}$

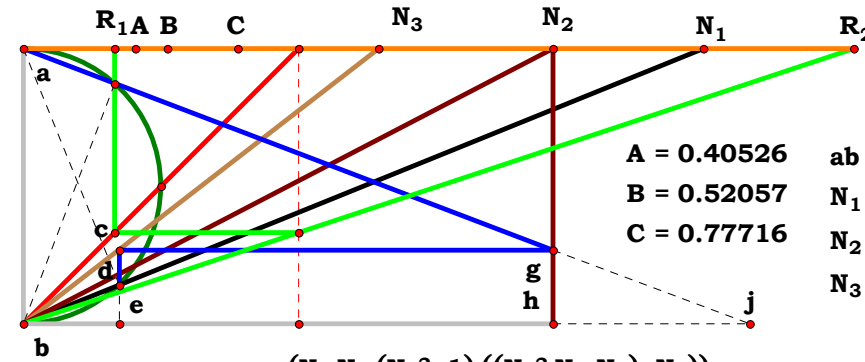
$R_1 = 0.331885$   $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1) \cdot (N_1^2 \cdot N_3 - N_1 + N_3)}{N_1^2 + N_3^2 \cdot (N_1^2 + 1)^2 \cdot (N_2^2 + 1) - 2 \cdot N_1 \cdot N_3 \cdot (N_1^2 + 1)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$R_1 - \frac{B \cdot (A^2 + 1) \cdot (A^2 - C \cdot A + 1)}{(A^2 + 1)^2 + B^2 \cdot (A^2 - C \cdot A + 1)^2} = 0 \quad R_2 - \frac{(A^2 + 1)^2 + B^2 \cdot (A^2 - C \cdot A + 1)^2}{B \cdot (A^2 + 1) \cdot (A^2 - C \cdot A + 1)} = 0$$



$A = 0.40526$   $ab = 1.00000$   
 $B = 0.52057$   $N_1 = 2.46754$   
 $C = 0.77716$   $N_2 = 1.92097$   
 $N_3 = 1.28674$

$R_1 = 0.33188$

$$\frac{(N_2 \cdot N_3 \cdot (N_1^2 + 1) \cdot ((N_1^2 \cdot N_3 - N_1) + N_3))}{((N_1^2 + N_3^2 \cdot (N_1^2 + 1)^2 \cdot (N_2^2 + 1)) - 2 \cdot N_1 \cdot N_3 \cdot (N_1^2 + 1))} = 0.33188$$

$$\frac{(B \cdot (A^2 + 1) \cdot ((A^2 - A \cdot C) + 1))}{((A^2 + 1)^2 + B^2 \cdot ((A^2 - A \cdot C) + 1)^2)} = 0.33188$$

$R_2 = 3.01309$

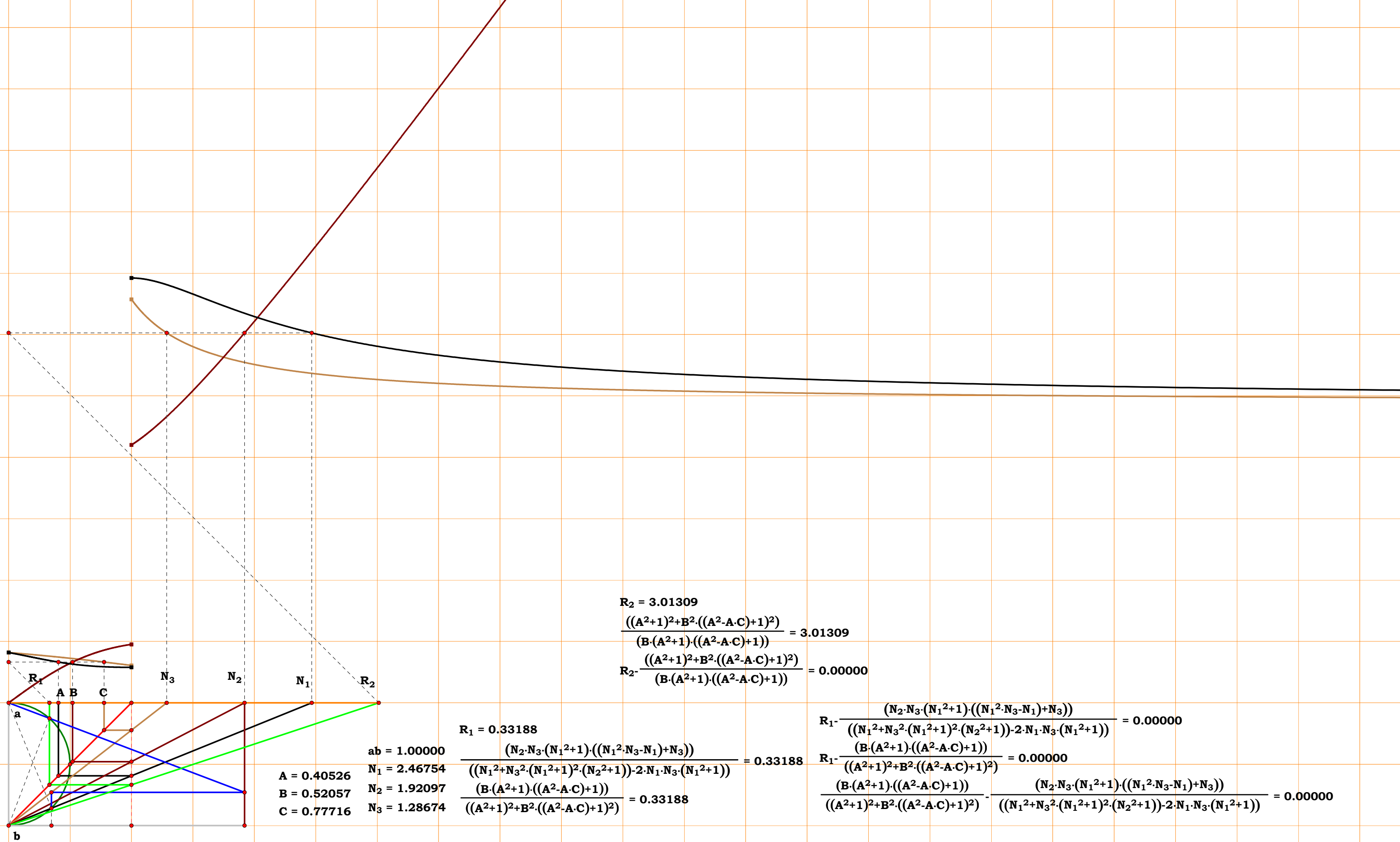
$$\frac{((A^2 + 1)^2 + B^2 \cdot ((A^2 - A \cdot C) + 1)^2)}{(B \cdot (A^2 + 1) \cdot ((A^2 - A \cdot C) + 1))} = 3.01309$$

$$R_2 - \frac{((A^2 + 1)^2 + B^2 \cdot ((A^2 - A \cdot C) + 1)^2)}{(B \cdot (A^2 + 1) \cdot ((A^2 - A \cdot C) + 1))} = 0.00000$$

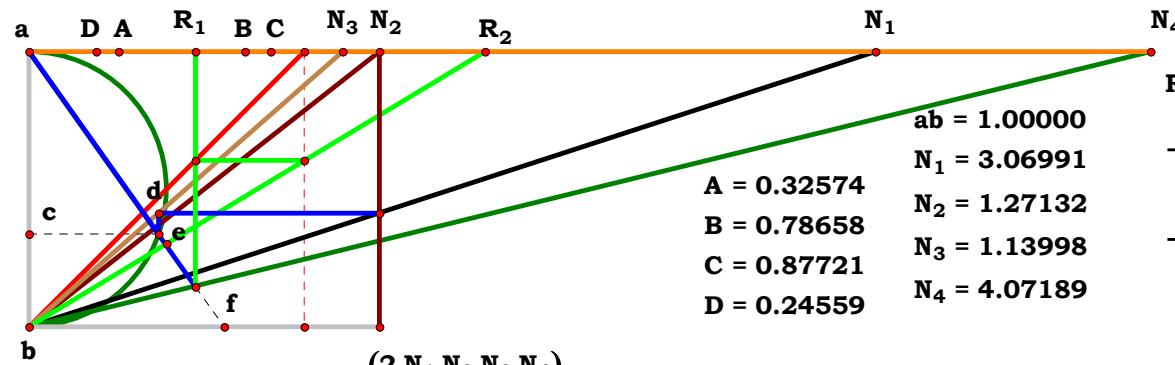
$$R_1 - \frac{(N_2 \cdot N_3 \cdot (N_1^2 + 1) \cdot ((N_1^2 \cdot N_3 - N_1) + N_3))}{((N_1^2 + N_3^2 \cdot (N_1^2 + 1)^2 \cdot (N_2^2 + 1)) - 2 \cdot N_1 \cdot N_3 \cdot (N_1^2 + 1))} = 0.00000$$

$$R_1 - \frac{(B \cdot (A^2 + 1) \cdot ((A^2 - A \cdot C) + 1))}{((A^2 + 1)^2 + B^2 \cdot ((A^2 - A \cdot C) + 1)^2)} = 0.00000$$

$$\frac{(B \cdot (A^2 + 1) \cdot ((A^2 - A \cdot C) + 1))}{((A^2 + 1)^2 + B^2 \cdot ((A^2 - A \cdot C) + 1)^2)} - \frac{(N_2 \cdot N_3 \cdot (N_1^2 + 1) \cdot ((N_1^2 \cdot N_3 - N_1) + N_3))}{((N_1^2 + N_3^2 \cdot (N_1^2 + 1)^2 \cdot (N_2^2 + 1)) - 2 \cdot N_1 \cdot N_3 \cdot (N_1^2 + 1))} = 0.00000$$



## 2SMT4R1

$$\mathbf{R}_1 - \frac{2 \cdot \mathbf{A}}{\sqrt{\mathbf{B}^2 \cdot \mathbf{C}^2 - 4 \cdot \mathbf{A}^2} + (2 \cdot \mathbf{A} \cdot \mathbf{D} + \mathbf{B} \cdot \mathbf{C})} = 0 \quad \mathbf{R}_2 - \frac{\sqrt{\mathbf{B}^2 \cdot \mathbf{C}^2 - 4 \cdot \mathbf{A}^2} + (2 \cdot \mathbf{A} \cdot \mathbf{D} + \mathbf{B} \cdot \mathbf{C})}{2 \cdot \mathbf{A}} = 0$$


$$R_1 - \frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3))} = 0.00000$$

$$R_1 - \frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2 + 2 \cdot A \cdot D + B \cdot C})} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2 + 2 \cdot A \cdot D + B \cdot C})} - \frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 \cdot 4 \cdot N_2^2 \cdot N_3^2 + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3)})} = 0.00000$$

$$R_1 = 0.60474$$

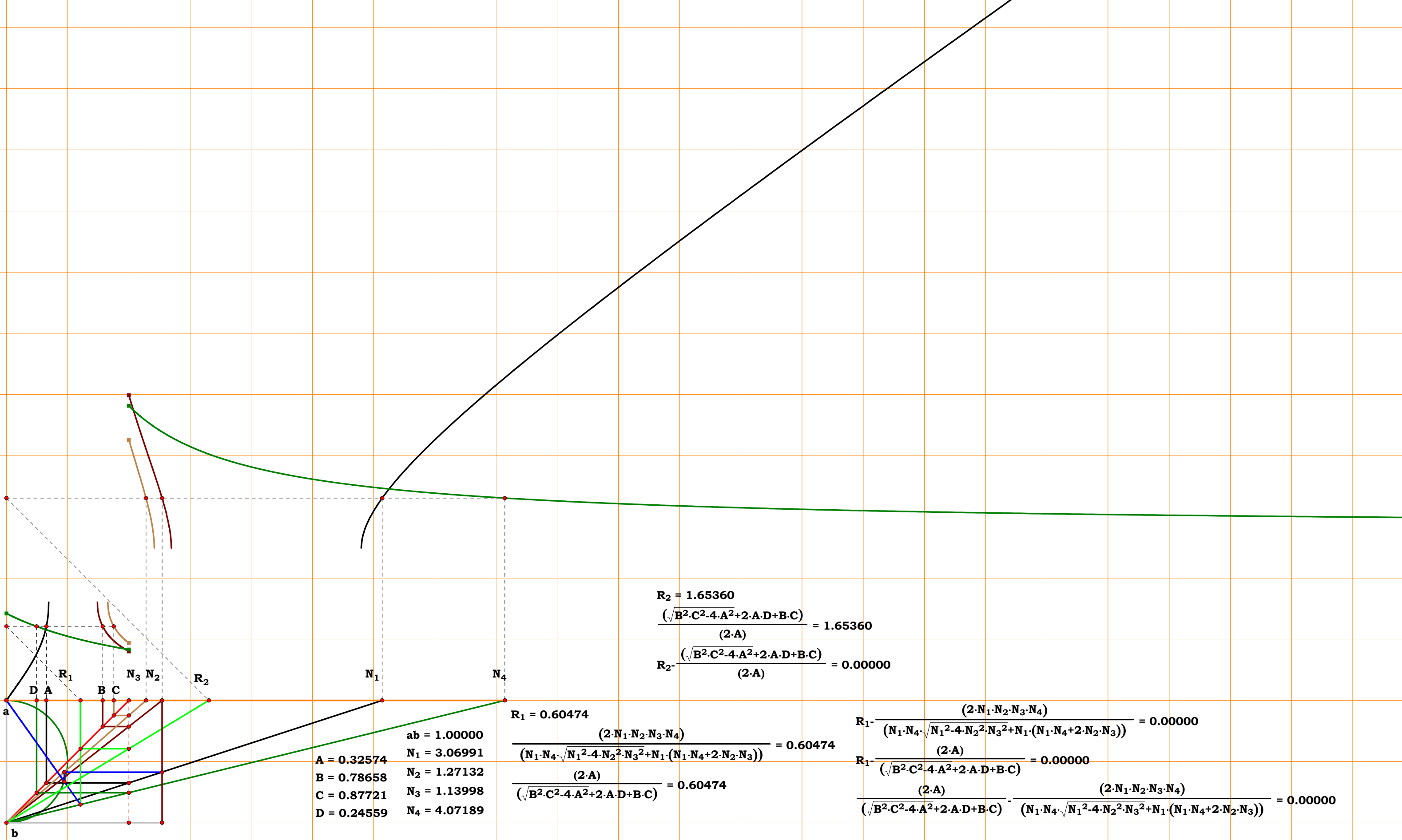
$$\frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 \cdot 4 \cdot N_2^2 \cdot N_3^2 + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3)})} = 0.60474$$

$$\frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2 + 2 \cdot A \cdot D + B \cdot C})} = 0.60474$$

$$R_2 = 1.65360$$

$$\frac{(\sqrt{B^2.C^2-4.A^2+2.A.D+B.C})}{(2.A)} = 1.65360$$

$$R_2 - \frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2 + 2 \cdot A \cdot D + B \cdot C})}{(2 \cdot A)} = 0.00000$$



$A = 0.32574$   
 $B = 0.78658$   
 $C = 0.87721$   
 $D = 0.24559$

$ab = 1.00000$   
 $N_1 = 3.06991$   
 $N_2 = 1.27132$   
 $N_3 = 1.13998$   
 $N_4 = 4.07189$

$$R_1 = 0.60474$$

$$\frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3))} = 0.60474$$

$$\frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.60474$$

$$R_2 = 1.65360$$

$$\frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A)} = 1.65360$$

$$R_2 - \frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A)} = 0.00000$$

$$R_1 - \frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3))} = 0.00000$$

$$R_1 - \frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} - \frac{(2 \cdot N_1 \cdot N_2 \cdot N_3 \cdot N_4)}{(N_1 \cdot N_4 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3))} = 0.00000$$



2SMT4R2

Given.

Unit.  $ab := 1$     $N_1 := 1.58183$

$N_2 := 1.93003$     $N_3 := 1.21238$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$     $be := \frac{1}{bN_1}$

$bf := \frac{N_1 \cdot be}{bN_1}$     $df := \frac{bf}{N_3}$

$bj := \frac{N_2}{1 - df}$     $R_1 := \frac{1}{bj}$

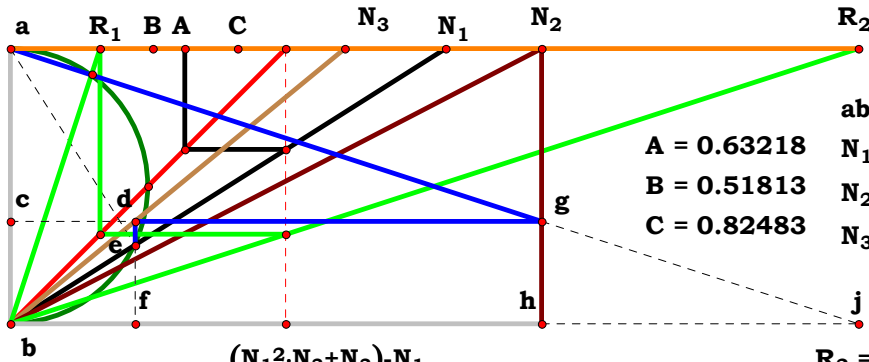
$R_1 = 0.3251$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_1^2 \cdot N_3 + N_3 - N_1}{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$R_1 - \frac{B \cdot (A^2 - C \cdot A + 1)}{A^2 + 1} = 0 \quad R_2 - \frac{A^2 + 1}{B \cdot (A^2 - C \cdot A + 1)} = 0$$



$$R_1 - \frac{(N_1^2 \cdot N_3 + N_3) - N_1}{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{B \cdot ((A^2 - A \cdot C) + 1)}{A^2 + 1} = 0.00000$$

$$\frac{B \cdot ((A^2 - A \cdot C) + 1)}{A^2 + 1} - \frac{(N_1^2 \cdot N_3 + N_3) - N_1}{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3} = 0.00000$$

$ab = 1.00000$

$N_1 = 1.58183$

$N_2 = 1.93003$

$N_3 = 1.21238$

$A = 0.63218$

$B = 0.51813$

$C = 0.82483$

$R_2 = 3.07599$

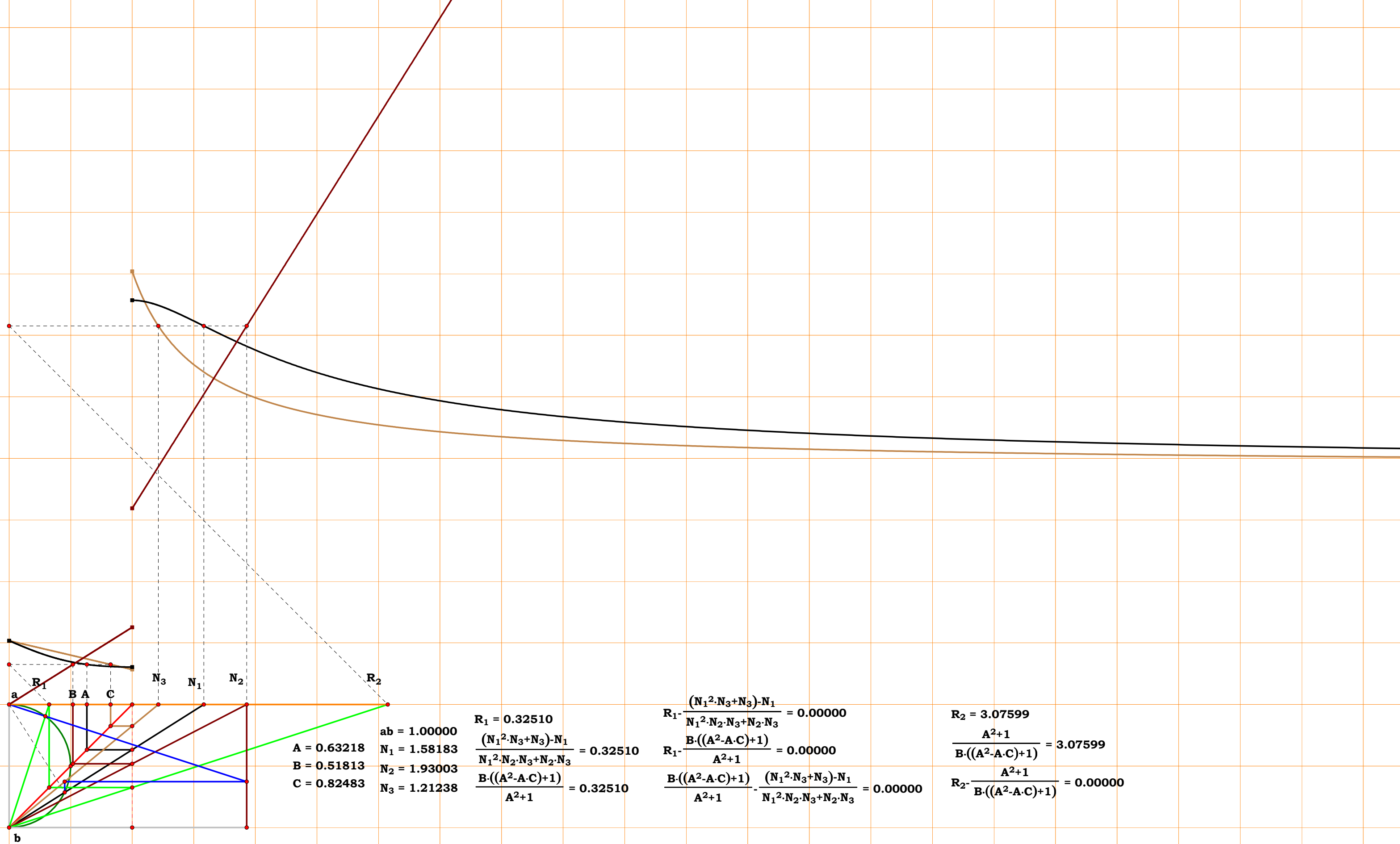
$$\frac{A^2 + 1}{B \cdot ((A^2 - A \cdot C) + 1)} = 3.07599$$

$$R_2 - \frac{A^2 + 1}{B \cdot ((A^2 - A \cdot C) + 1)} = 0.00000$$

$R_1 = 0.32510$

$$\frac{(N_1^2 \cdot N_3 + N_3) - N_1}{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3} = 0.32510$$

$$\frac{B \cdot ((A^2 - A \cdot C) + 1)}{A^2 + 1} = 0.32510$$



**Given.**

**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{N}_1 := 3.91484$$
$$\mathbf{N}_2 := 1.20624 \quad \mathbf{N}_3 := 1.39087$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

### Descriptions.

$$\mathbf{gh} := \frac{\mathbf{N}_2}{\mathbf{N}_1} \quad \mathbf{ce} := \mathbf{N}_3 \cdot \mathbf{gh} \quad \mathbf{cd} := \sqrt{\left(\frac{1}{2}\right)^2 - \mathbf{ce}^2}$$

$$\mathbf{be} := \frac{1}{2} + \mathbf{cd} \quad \mathbf{R_1} := \frac{\mathbf{ce}}{\mathbf{be}}$$

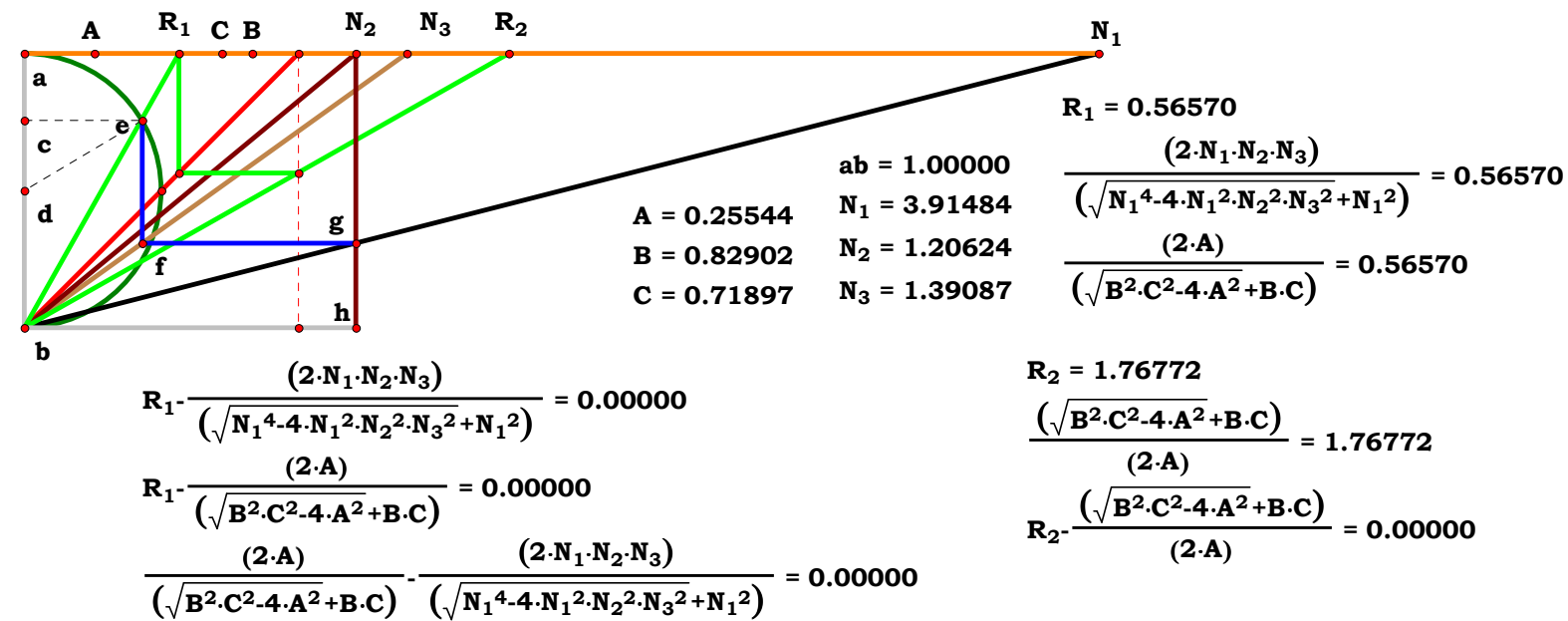
$$\mathbf{R}_1 = 0.565699 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

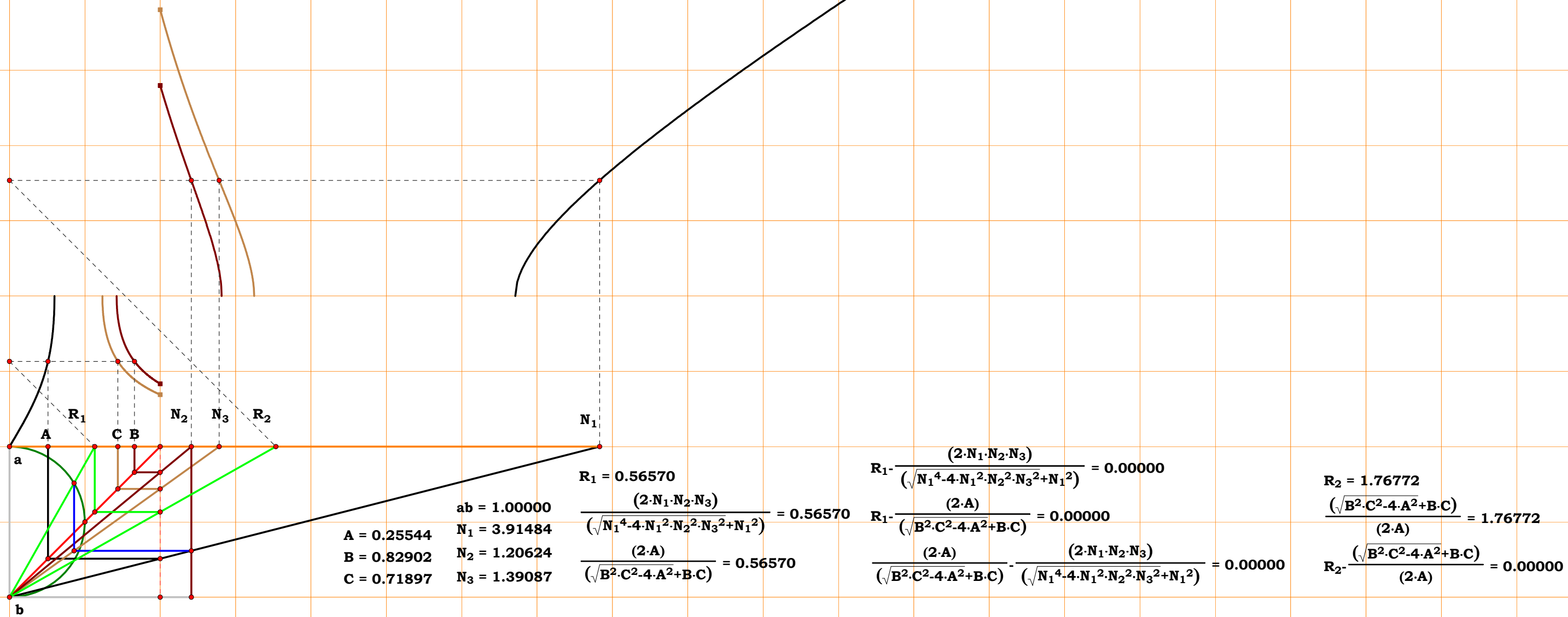
### Definitions.

$$\mathbf{R}_1 - \frac{2 \cdot \mathbf{N}_1 \cdot \mathbf{N}_2 \cdot \mathbf{N}_3}{\sqrt{\left(\mathbf{N}_1^4 - 4 \cdot \mathbf{N}_1^2 \cdot \mathbf{N}_2^2 \cdot \mathbf{N}_3^2\right) + \mathbf{N}_1^2}} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$R_1 - \frac{2 \cdot A}{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C} = 0 \quad R_2 - \frac{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C}{2 \cdot A} = 0$$







2SMT4R4

Given.

Unit.  $ab := 1$

$N_1 := 2.69911$     $N_2 := 1.32136$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$     $be := \frac{1}{bN_1}$

$bf := \frac{N_1 \cdot be}{bN_1}$     $df := \frac{bf}{N_2}$

$eg := \sqrt{df \cdot (1 - df)}$     $R_1 := \frac{eg}{df}$

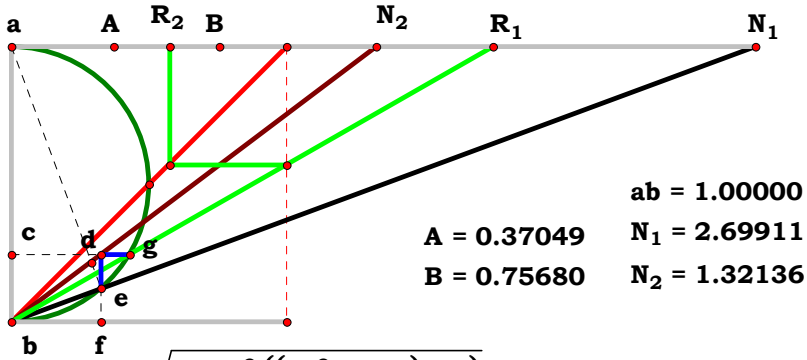
$R_1 = 1.748156$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{\sqrt{N_1 \cdot N_2^2 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}}{N_1 \cdot N_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{A \cdot B \cdot \sqrt{A^2 - B \cdot A + 1}}{\sqrt{A^3 \cdot B^3}} = 0 \quad R_2 - \frac{\sqrt{A^3 \cdot B^3}}{A \cdot B \cdot \sqrt{A^2 - B \cdot A + 1}} = 0$$



$$R_1 - \frac{\sqrt{N_1 \cdot N_2^2 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}}{N_1 \cdot N_2} = 0.00000$$

$$R_1 - \frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} = 0.00000$$

$$\frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} - \frac{\sqrt{N_1 \cdot N_2^2 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}}{N_1 \cdot N_2} = 0.00000$$

$ab = 1.00000$

$A = 0.37049$     $N_1 = 2.69911$

$B = 0.75680$     $N_2 = 1.32136$

$R_1 = 1.74816$

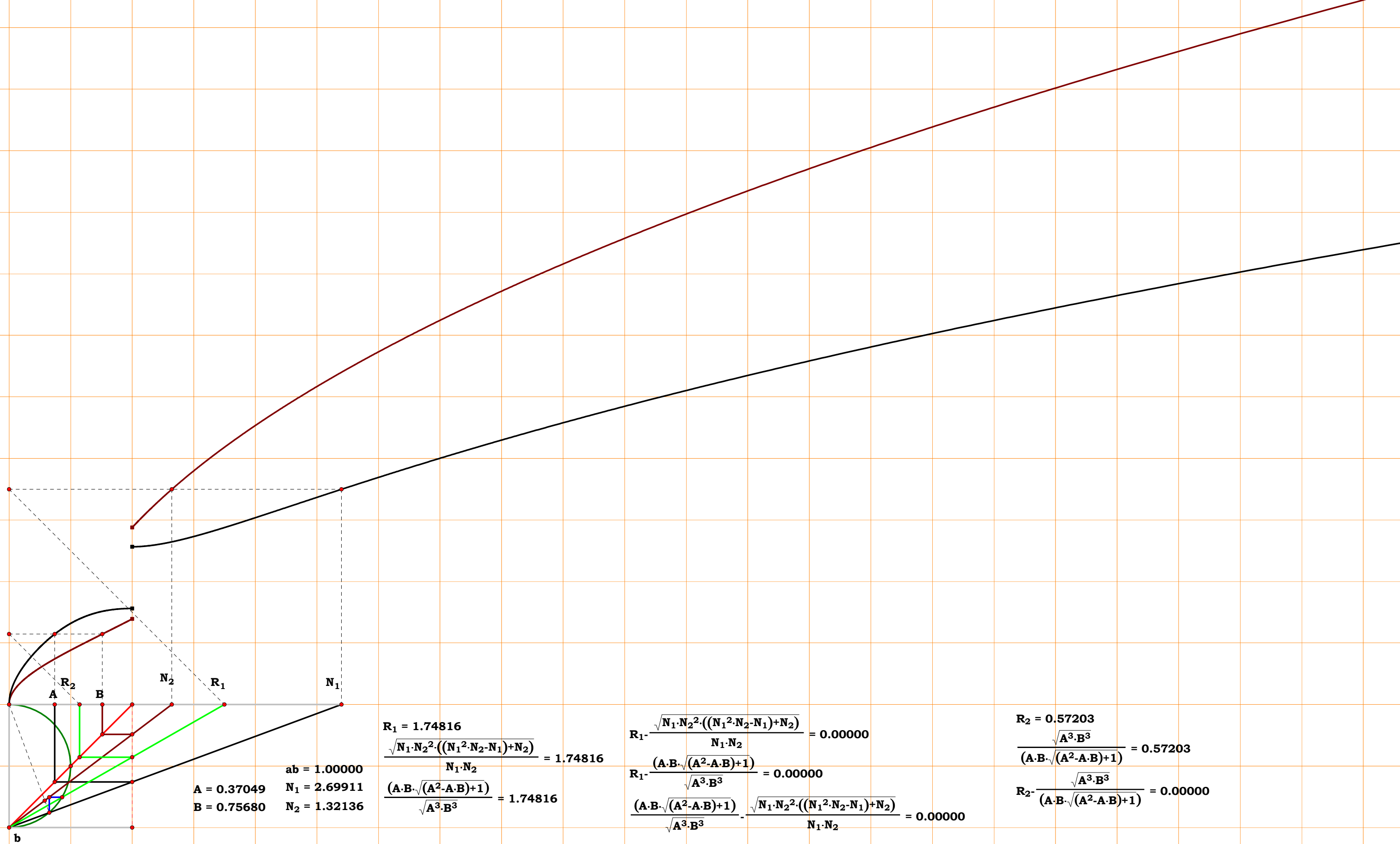
$$\frac{\sqrt{N_1 \cdot N_2^2 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}}{N_1 \cdot N_2} = 1.74816$$

$$\frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} = 1.74816$$

$R_2 = 0.57203$

$$\frac{\sqrt{A^3 \cdot B^3}}{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})} = 0.57203$$

$$R_2 - \frac{\sqrt{A^3 \cdot B^3}}{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})} = 0.00000$$



$$\begin{aligned}
 A &= 0.37049 & N_1 &= 2.69911 \\
 B &= 0.75680 & N_2 &= 1.32136 \\
 ab &= 1.00000
 \end{aligned}$$

$$\begin{aligned}
 R_1 &= 1.74816 \\
 \frac{\sqrt{N_1 \cdot N_2^2 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_2} &= 1.74816 \\
 \frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} &= 1.74816
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{\sqrt{N_1 \cdot N_2^2 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_2} &= 0.00000 \\
 R_1 - \frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} &= 0.00000 \\
 \frac{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})}{\sqrt{A^3 \cdot B^3}} - \frac{\sqrt{N_1 \cdot N_2^2 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_2} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.57203 \\
 \frac{\sqrt{A^3 \cdot B^3}}{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})} &= 0.57203 \\
 R_2 - \frac{\sqrt{A^3 \cdot B^3}}{(A \cdot B \cdot \sqrt{(A^2 - A \cdot B) + 1})} &= 0.00000
 \end{aligned}$$



2SMT4R5

Given.

Unit.  $ab := 1$

$N_1 := 3.99520$     $N_2 := 1.51739$

$N_3 := 1.22346$     $N_4 := 2.72028$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$$cd := N_3 \cdot \frac{N_2}{N_1} \quad ac := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - cd^2} \quad R_1 := N_4 \cdot (1 - ac)$$

$$R_1 = 1.86231 \quad R_2 := \frac{1}{R_1}$$

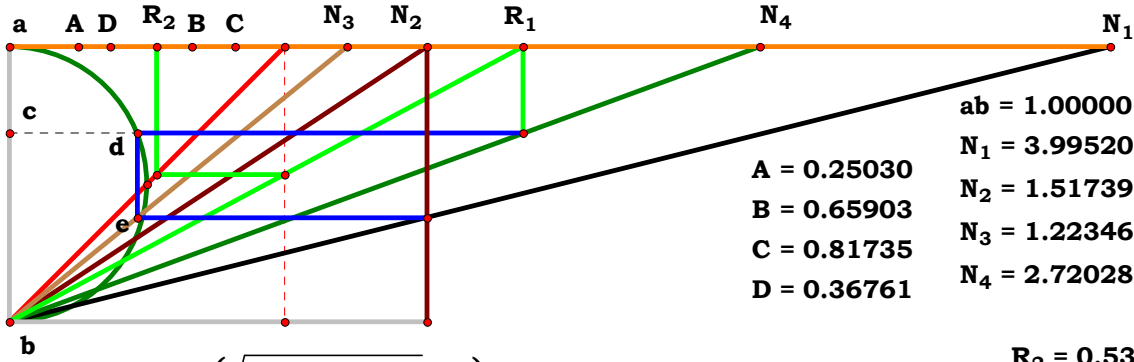
Definitions.

$$R_1 - \frac{N_4 \cdot \left( \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \right)}{2 \cdot N_1} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C}{2 \cdot D \cdot B \cdot C} = 0 \quad R_2 - \frac{2 \cdot D \cdot B \cdot C}{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C} = 0$$



A = 0.25030  
B = 0.65903  
C = 0.81735  
D = 0.36761

ab = 1.00000  
N1 = 3.99520  
N2 = 1.51739  
N3 = 1.22346  
N4 = 2.72028

$$R_1 = 1.86230$$

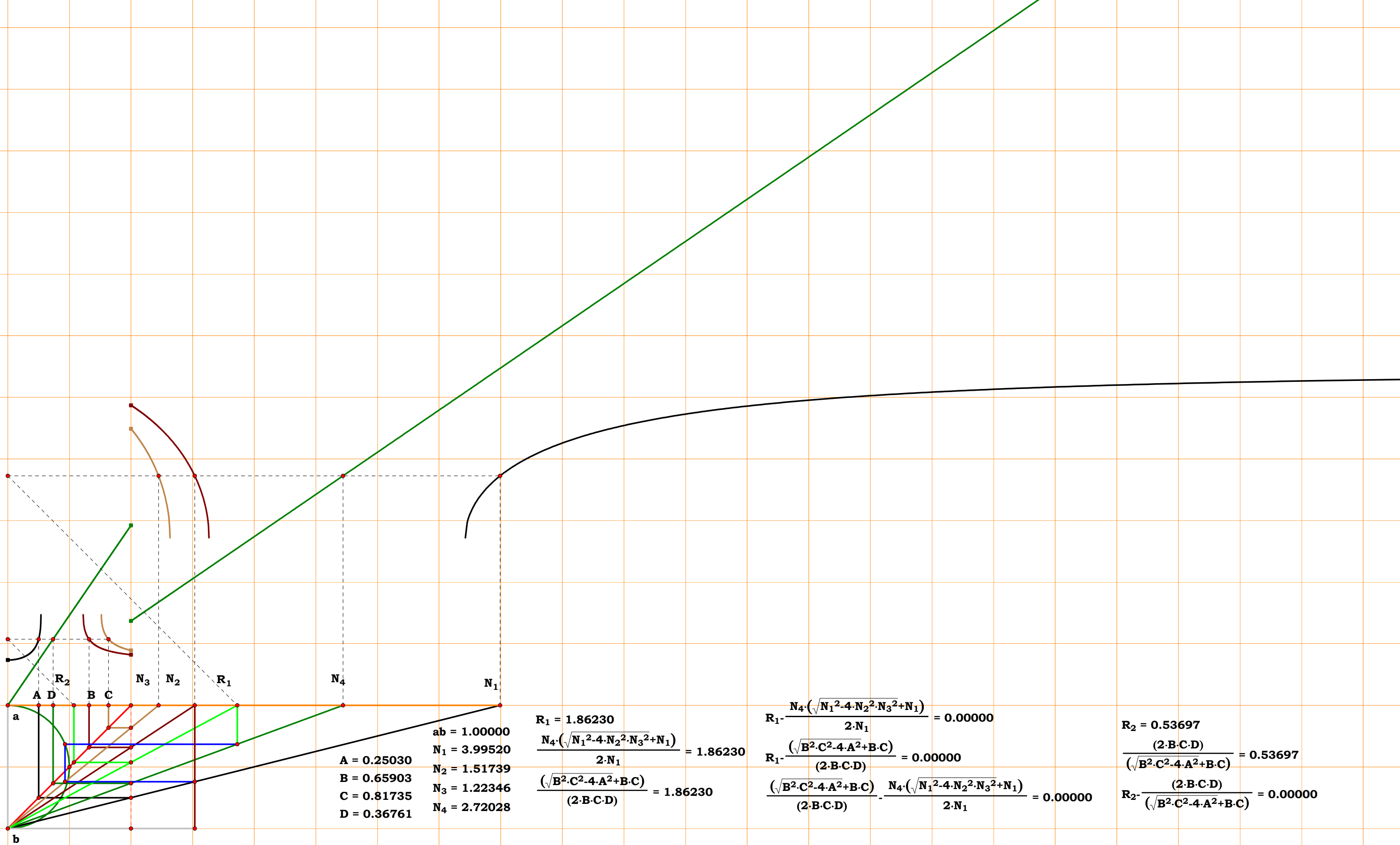
$$\frac{N_4 \cdot \left( \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2} + N_1 \right)}{2 \cdot N_1} = 1.86230$$

$$\frac{\left( \sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C \right)}{(2 \cdot B \cdot C \cdot D)} = 1.86230$$

$$R_2 = 0.53697$$

$$\frac{(2 \cdot B \cdot C \cdot D)}{\left( \sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C \right)} = 0.53697$$

$$R_2 - \frac{(2 \cdot B \cdot C \cdot D)}{\left( \sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C \right)} = 0.00000$$



**2SMT4R6**

**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{N}_3 := 1.17109 \quad \mathbf{N}_4 := 1.81455$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3} \quad \mathbf{D} := \frac{1}{N_4}$$

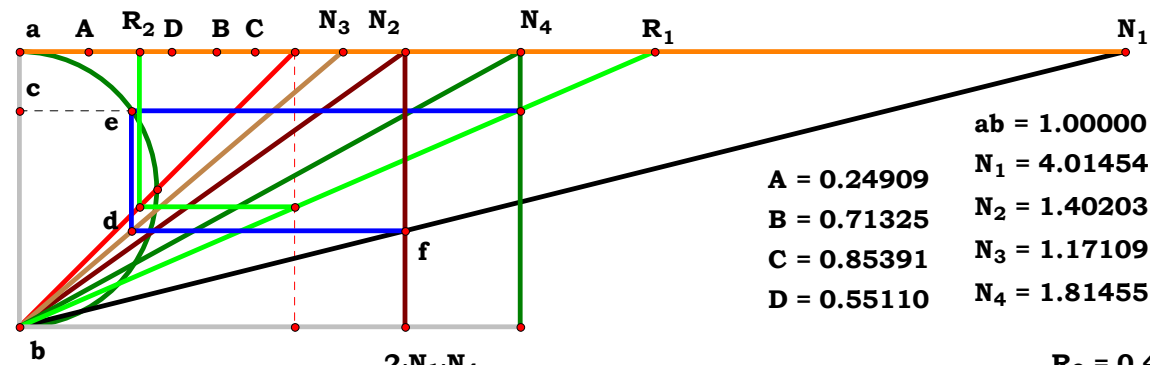
$$\mathbf{ce} := \mathbf{N}_3 \cdot \frac{\mathbf{N}_2}{\mathbf{N}_1} \quad \mathbf{ac} := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - \mathbf{ce}^2} \quad \mathbf{R}_1 := \frac{\mathbf{N}_4}{1 - \mathbf{ac}}$$

$$\mathbf{R}_1 = 2.303826 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{2 \cdot N_1 \cdot N_4}{\sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2 + N_1}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{2 \cdot B \cdot C}{D \cdot (\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C)} = 0 \quad R_2 - \frac{D \cdot (\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + B \cdot C)}{2 \cdot B \cdot C} = 0$$



**A = 0.24909**  
**B = 0.71325**  
**C = 0.85391**  
**D = 0.55110**

**ab = 1.00000**  
**N<sub>1</sub> = 4.01454**  
**N<sub>2</sub> = 1.40203**  
**N<sub>3</sub> = 1.17109**  
**N<sub>4</sub> = 1.81455**

$$R_1 = 2.30382$$

$$\frac{2 \cdot N_1 \cdot N_4}{N_1 + \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}} = 2.30382$$

$$\frac{(2 \cdot B \cdot C)}{(D \cdot (B \cdot C + \sqrt{B^2 \cdot C^2 - 4 \cdot A^2}))} = 2.30382$$

$$R_2 = 0.43406$$

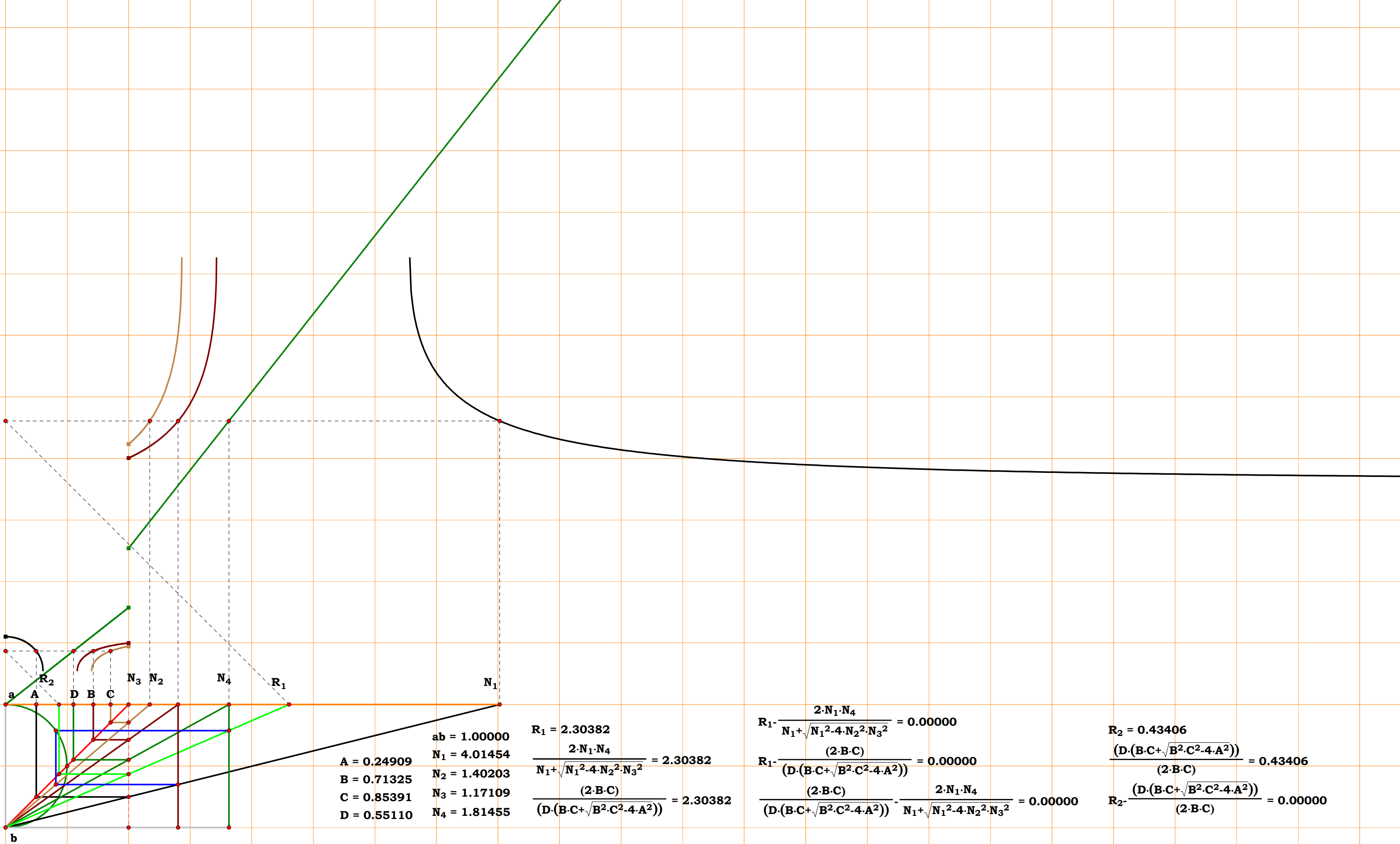
$$\frac{(D \cdot (B \cdot C + \sqrt{B^2 \cdot C^2 - 4 \cdot A^2}))}{(2 \cdot B \cdot C)} = 0.43406$$

$$R_2 - \frac{(D \cdot (B \cdot C + \sqrt{B^2 \cdot C^2 - 4 \cdot A^2}))}{(2 \cdot B \cdot C)} = 0.00000$$

$$R_1 - \frac{2 \cdot N_1 \cdot N_4}{N_1 + \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}} = 0.00000$$

$$R_1 - \frac{(2 \cdot B \cdot C)}{(D \cdot (B \cdot C + \sqrt{B^2 \cdot C^2 - 4 \cdot A^2}))} = 0.00000$$

$$\frac{(2 \cdot B \cdot C)}{(D \cdot (B \cdot C + \sqrt{B^2 \cdot C^2 - 4 \cdot A^2}))} - \frac{2 \cdot N_1 \cdot N_4}{N_1 + \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}} = 0.00000$$



**2SMT4R7**

**Unit.**  $\mathbf{ab} := 1 \quad \mathbf{N}_1 := 2.20402$

$$\mathbf{N}_2 := 1.55603 \quad \mathbf{N}_3 := 1.16660$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bd} := \frac{1}{\mathbf{bN}_1}$$

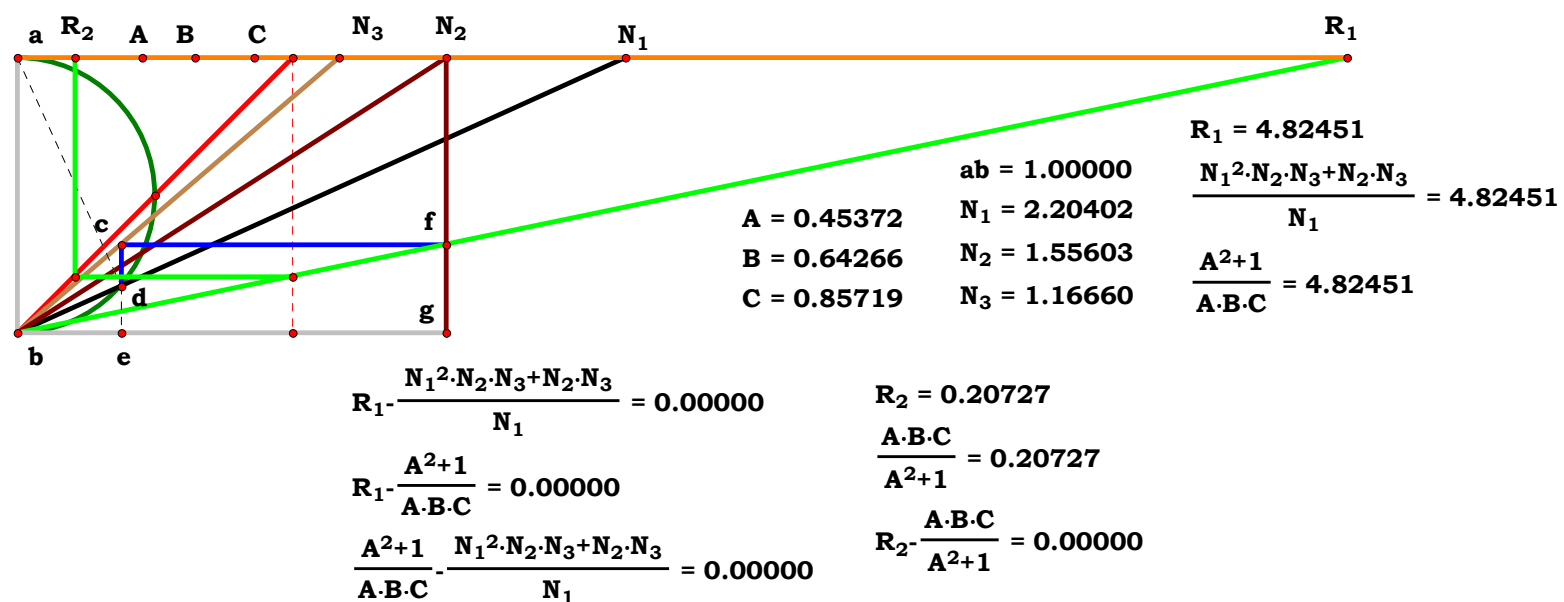
$$\mathbf{be} := \frac{\mathbf{N}_1 \cdot \mathbf{bd}}{\mathbf{bN}_1} \quad \mathbf{ce} := \frac{\mathbf{be}}{\mathbf{N}_3} \quad \mathbf{R}_1 := \frac{\mathbf{N}_2}{\mathbf{ce}}$$

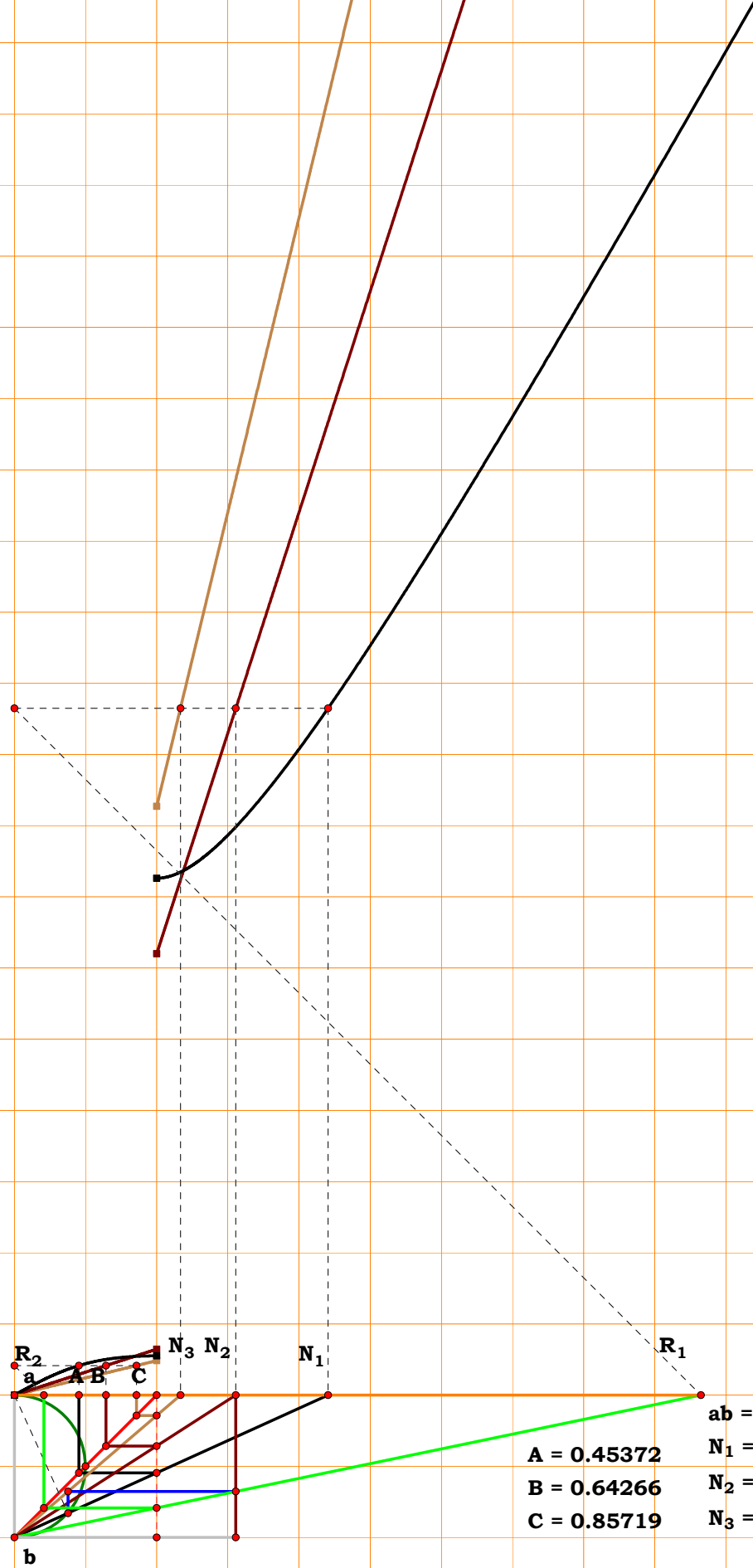
$$\mathbf{R}_1 = 4.824495 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 + \mathbf{1})}{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}}{(\mathbf{A}^2 + \mathbf{1})} = 0$$





$R_1 = 4.82451$	
$\frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1} = 4.82451$	
$\frac{A^2 + 1}{A \cdot B \cdot C} = 4.82451$	

$$\begin{aligned} R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1} &= 0.00000 \\ R_1 - \frac{A^2 + 1}{A \cdot B \cdot C} &= 0.00000 \\ \frac{A^2 + 1}{A \cdot B \cdot C} - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1} &= 0.00000 \end{aligned}$$

$$\begin{aligned} R_2 &= 0.20727 \\ \frac{A \cdot B \cdot C}{A^2 + 1} &= 0.20727 \\ R_2 - \frac{A \cdot B \cdot C}{A^2 + 1} &= 0.00000 \end{aligned}$$



2SMT4R9

Given.

Unit.  $ab := 1$

$$N_1 := 2.38119 \quad N_2 := 1.72758 \quad N_3 := 1.44282$$

$$N_4 := 3.54292 \quad N_5 := 1.12556 \quad N_6 := 1.32443$$

$$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3} \quad D := \frac{1}{N_4} \quad E := \frac{1}{N_5} \quad F := \frac{1}{N_6}$$

Descriptions.

$$bN_1 := \sqrt{1 + N_1^2} \quad bg := \frac{1}{bN_1} \quad bh := N_1 \cdot \frac{bg}{bN_1}$$

$$fh := \frac{bh}{N_2} \quad cd := \frac{N_3}{N_4} \cdot N_5 \quad ac := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - cd^2}$$

$$aj := N_6 \cdot (1 - ac) \quad R_1 := \frac{aj}{fh}$$

$$R_1 = 4.484731 \quad R_2 := \frac{1}{R_1}$$

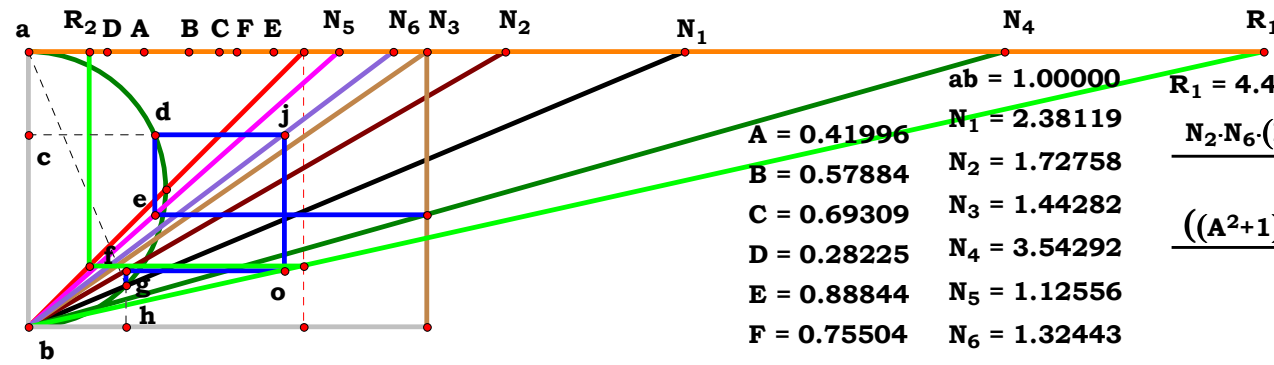
Definitions.

$$R_1 - \frac{N_2 \cdot N_6 \cdot (N_1^2 + 1) \cdot \left(\sqrt{N_4^2 - 4 \cdot N_3^2 \cdot N_5^2} + N_4\right)}{2 \cdot N_1 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0 \quad N_6 - \frac{1}{F} = 0$$

$$R_1 - \frac{\left[\sqrt{(C^2 \cdot E^2 - 4 \cdot D^2)} + C \cdot E\right] \cdot (A^2 + 1)}{(2 \cdot A \cdot B \cdot C \cdot E \cdot F)} = 0 \quad R_2 - \frac{(2 \cdot A \cdot B \cdot C \cdot E \cdot F)}{\left[\sqrt{(C^2 \cdot E^2 - 4 \cdot D^2)} + C \cdot E\right] \cdot (A^2 + 1)} = 0$$



$$ab = 1.00000$$

$$A = 0.41996$$

$$B = 0.57884$$

$$C = 0.69309$$

$$D = 0.28225$$

$$E = 0.88844$$

$$F = 0.75504$$

$$R_1 = 4.48471$$

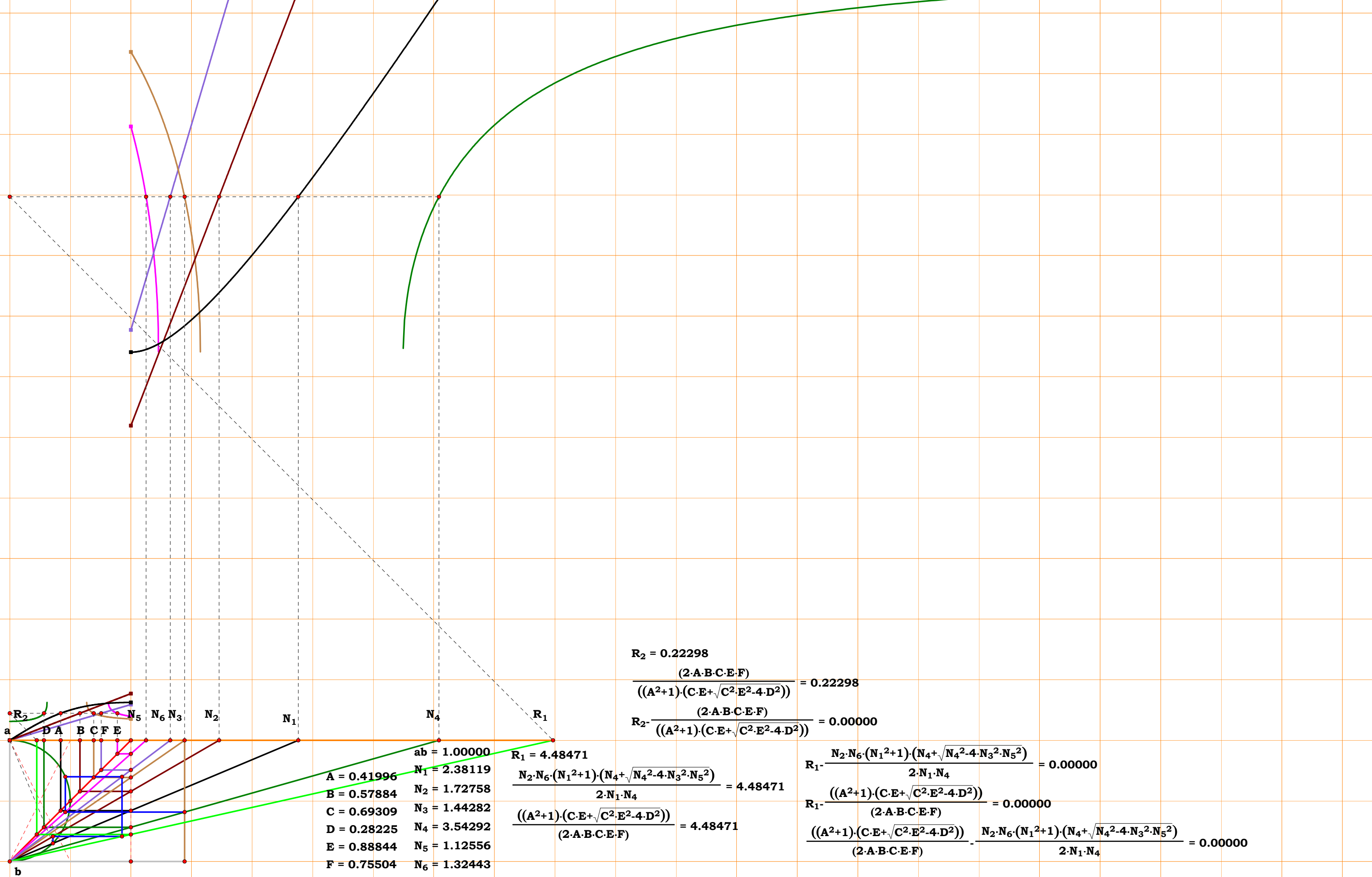
$$\frac{N_2 \cdot N_6 \cdot (N_1^2 + 1) \cdot (N_4 + \sqrt{N_4^2 - 4 \cdot N_3^2 \cdot N_5^2})}{2 \cdot N_1 \cdot N_4} = 4.48471$$

$$\frac{((A^2 + 1) \cdot (C \cdot E + \sqrt{C^2 \cdot E^2 - 4 \cdot D^2}))}{(2 \cdot A \cdot B \cdot C \cdot E \cdot F)} = 4.48471$$

$$R_2 = 0.22298$$

$$\frac{(2 \cdot A \cdot B \cdot C \cdot E \cdot F)}{((A^2 + 1) \cdot (C \cdot E + \sqrt{C^2 \cdot E^2 - 4 \cdot D^2}))} = 0.22298$$

$$R_2 - \frac{(2 \cdot A \cdot B \cdot C \cdot E \cdot F)}{((A^2 + 1) \cdot (C \cdot E + \sqrt{C^2 \cdot E^2 - 4 \cdot D^2}))} = 0.00000$$





2SMT4R10

Given.

Unit.  $ab := 1$

$N_1 := 4.16658$   $N_2 := 1.31346$

$N_3 := 1.55293$   $N_4 := 2.27446$

$N_5 := 1.40993$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$   $E := \frac{1}{N_5}$

Descriptions.

$cd := N_3 \cdot \frac{N_2}{N_1}$   $bc := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - cd^2}$

$be := \frac{cd}{1 - bc}$   $fg := \frac{be}{be + N_4}$   $R_1 := \frac{N_5}{fg}$

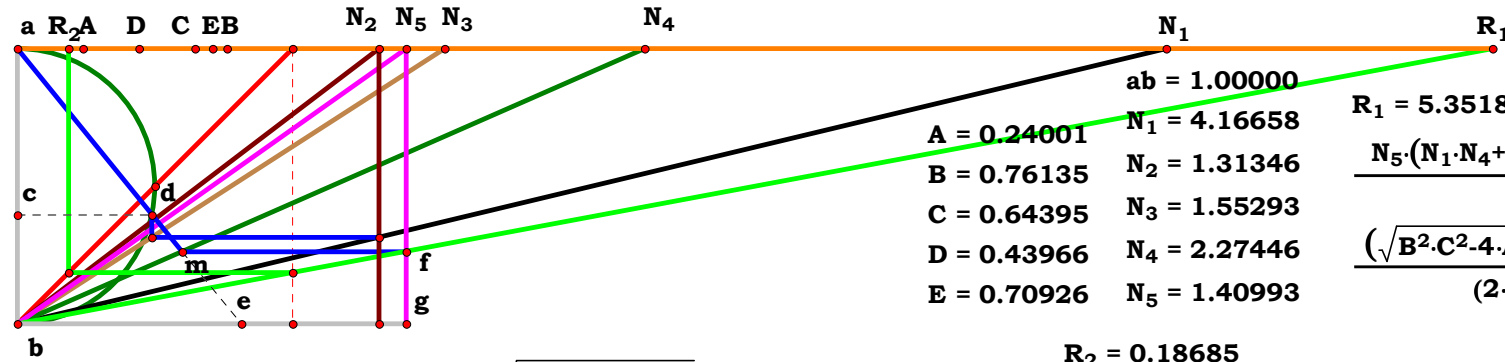
$R_1 = 5.351697$   $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0$$

$$R_1 - \frac{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + (2 \cdot A \cdot D + B \cdot C)}{2 \cdot A \cdot D \cdot E} = 0 \quad R_2 - \frac{2 \cdot A \cdot D \cdot E}{\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + (2 \cdot A \cdot D + B \cdot C)} = 0$$



$ab = 1.00000$   
 $A = 0.24001$   
 $B = 0.76135$   
 $C = 0.64395$   
 $D = 0.43966$   
 $E = 0.70926$

$N_1 = 4.16658$   
 $N_2 = 1.31346$   
 $N_3 = 1.55293$   
 $N_4 = 2.27446$   
 $N_5 = 1.40993$

$R_1 = 5.35180$

$$\frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 5.35180$$

$$\frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} = 5.35180$$

$R_2 = 0.18685$

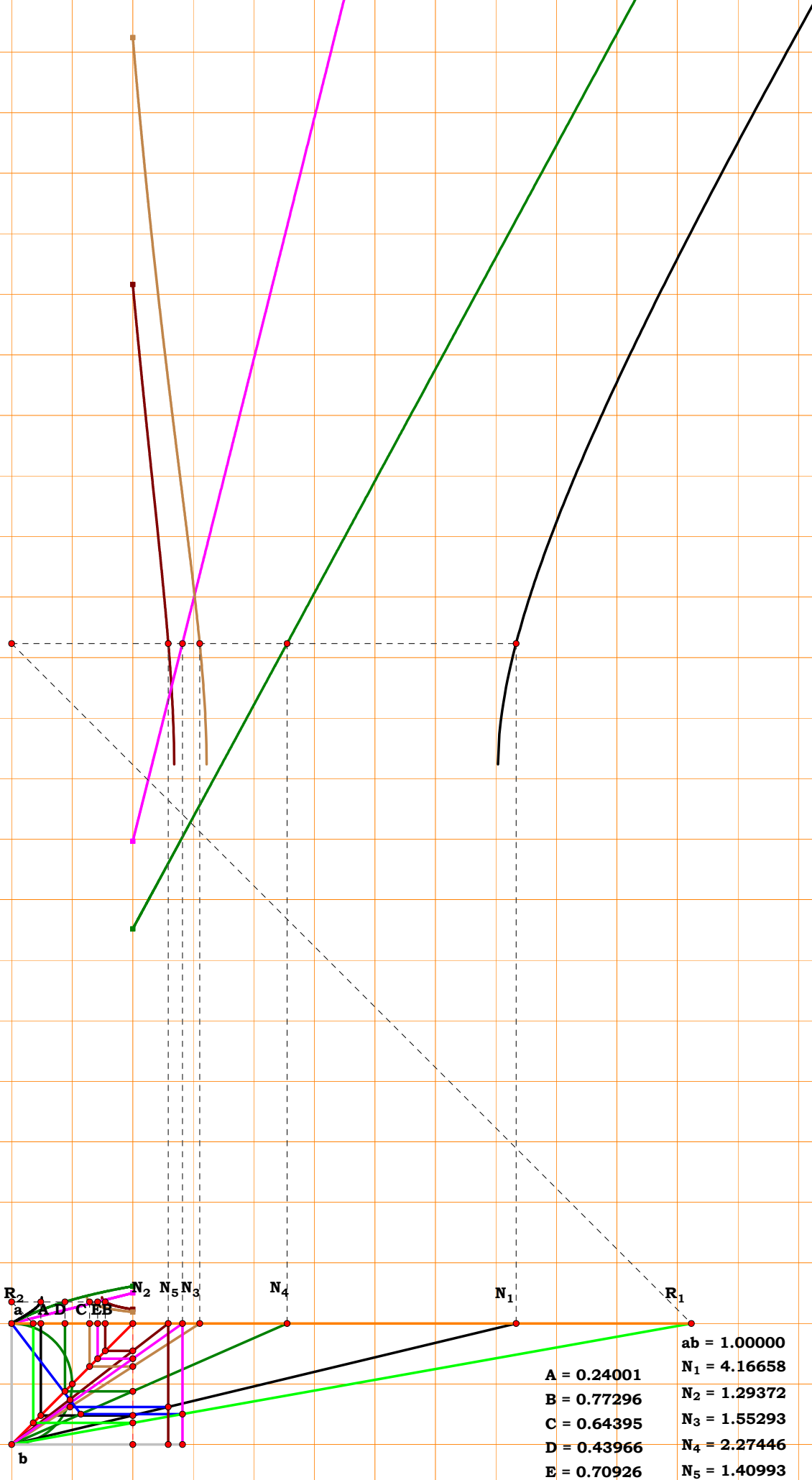
$$\frac{(2 \cdot A \cdot D \cdot E)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.18685$$

$$R_2 - \frac{(2 \cdot A \cdot D \cdot E)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.00000$$

$$R_1 - \frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} = 0.00000$$

$$\frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} - \frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 0.00000$$



$A = 0.24001$   
 $B = 0.77296$   
 $C = 0.64395$   
 $D = 0.43966$   
 $E = 0.70926$   
 $ab = 1.00000$   
 $N_1 = 4.16658$   
 $N_2 = 1.29372$   
 $N_3 = 1.55293$   
 $N_4 = 2.27446$   
 $N_5 = 1.40993$

$$R_1 = 5.61499$$
$$\frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 5.61499$$
$$\frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} = 5.61499$$

$$R_2 = 0.17809$$
$$\frac{(2 \cdot A \cdot D \cdot E)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.17809$$
$$R_2 - \frac{(2 \cdot A \cdot D \cdot E)}{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)} = 0.00000$$
$$R_1 - \frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 0.00000$$
$$R_1 - \frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} = 0.00000$$
$$\frac{(\sqrt{B^2 \cdot C^2 - 4 \cdot A^2} + 2 \cdot A \cdot D + B \cdot C)}{(2 \cdot A \cdot D \cdot E)} - \frac{N_5 \cdot (N_1 \cdot N_4 + 2 \cdot N_2 \cdot N_3) + N_4 \cdot N_5 \cdot \sqrt{N_1^2 - 4 \cdot N_2^2 \cdot N_3^2}}{2 \cdot N_2 \cdot N_3} = 0.00000$$



2SMT4R11

Given.

Unit.  $ab := 1$       $N_1 := 1.72558$

$N_2 := 1.16126$       $N_3 := 1.31465$

$A := \frac{1}{N_1}$       $B := \frac{1}{N_2}$       $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$       $be := \frac{1}{bN_1}$

$ce := \frac{N_1 \cdot be}{bN_1}$       $fg := \frac{ce}{N_2}$       $R_1 := \frac{N_3}{fg}$

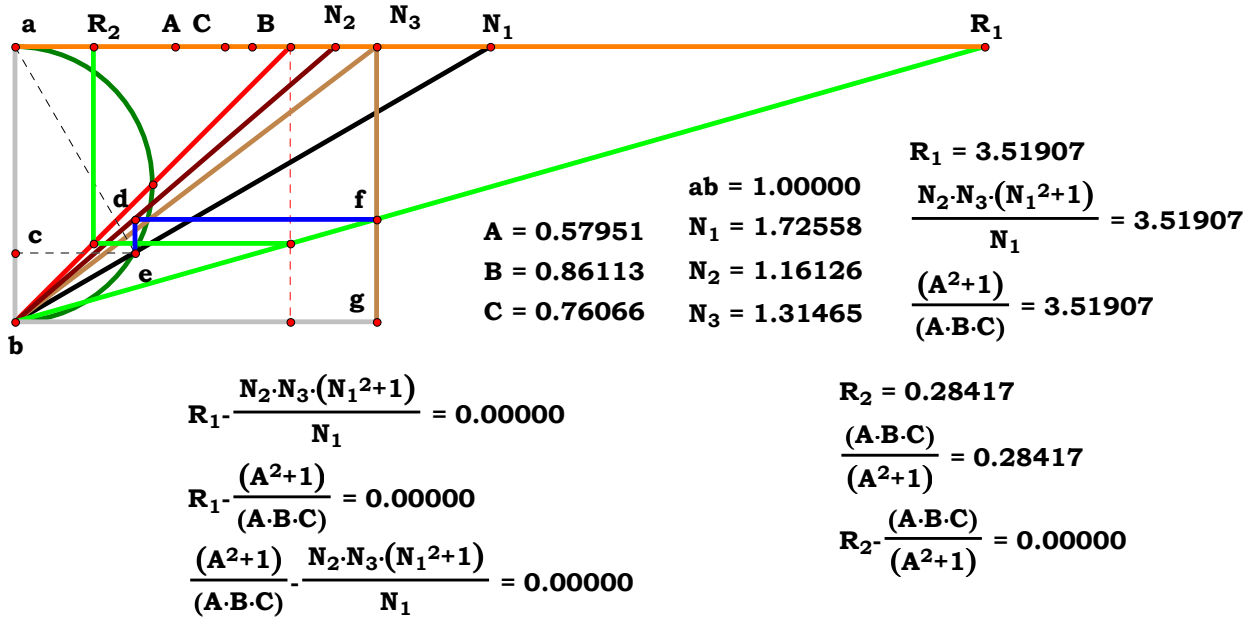
$R_1 = 3.519075$       $R_2 := \frac{1}{R_1}$

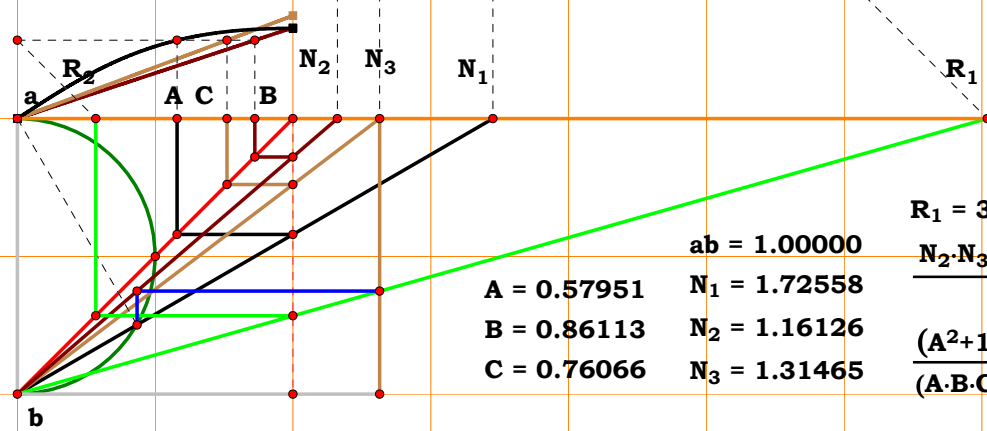
Definitions.

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} = 0$

$N_1 - \frac{1}{A} = 0$       $N_2 - \frac{1}{B} = 0$       $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{(A^2 + 1)}{A \cdot B \cdot C} = 0$       $R_2 - \frac{A \cdot B \cdot C}{(A^2 + 1)} = 0$





$$\frac{N_2 \cdot N_3 \cdot (N_1^{2+1})}{N_1} = 3.51907$$

$$\frac{(A^{2+1})}{(A \cdot B \cdot C)} = 3.51907$$

$$R_2 - \frac{(A \cdot B \cdot C)}{(A^2 + 1)} = 0.00000$$



2SMT5R0

Given.

Unit.  $ab := 1$   $N_1 := 1.56852$

$N_2 := 1.34863$   $N_3 := 1.13456$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$   $bd := \frac{1}{bN_1}$

$be := \frac{N_1 \cdot bd}{bN_1}$   $ce := \frac{(N_3 - be)}{N_3}$

$bk := \frac{N_2}{1 - ce}$   $ak := \sqrt{bk^2 + 1}$

$af := \frac{1}{ak}$   $R_1 := \frac{bk \cdot af}{ak}$

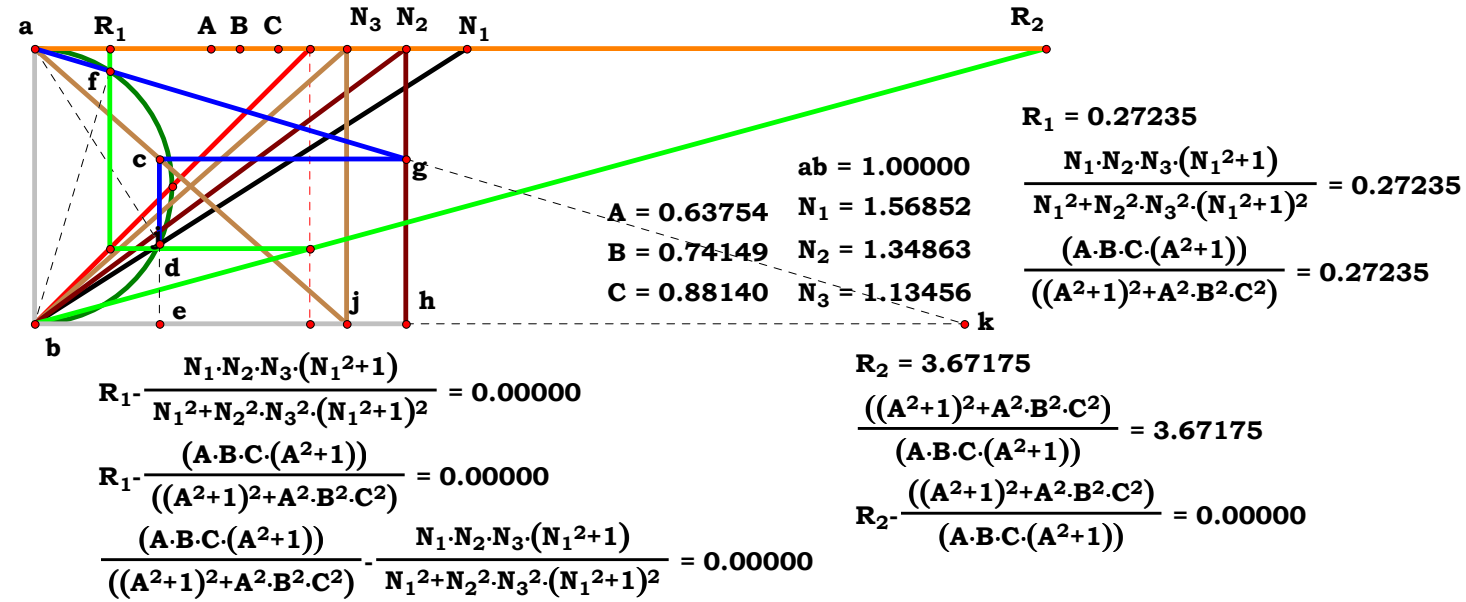
$R_1 = 0.272349$   $R_2 := \frac{1}{R_1}$

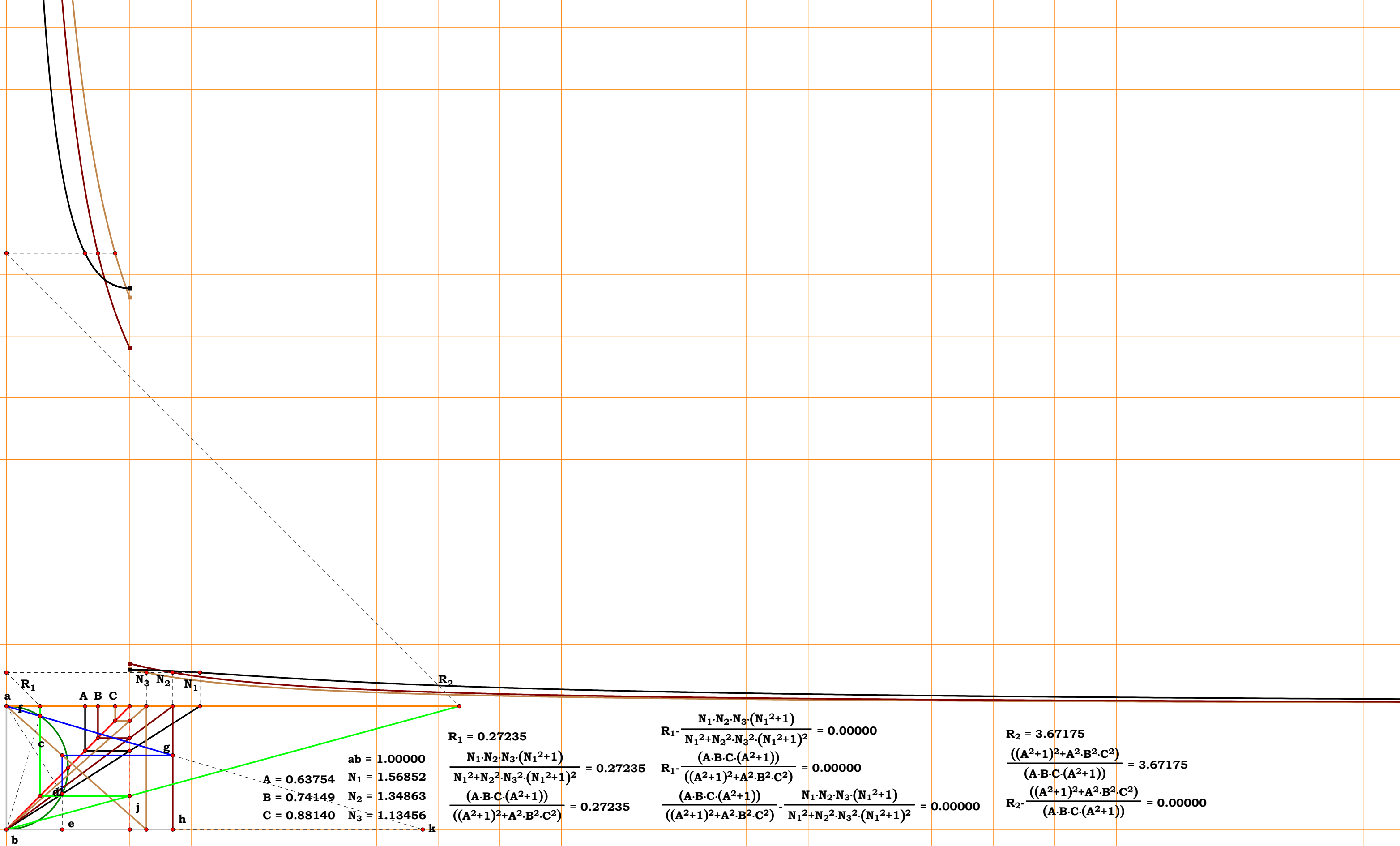
Definitions.

$$R_1 - \frac{N_1 \cdot N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 + N_2^2 \cdot N_3^2 \cdot (N_1^2 + 1)^2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$R_1 - \frac{A \cdot B \cdot C \cdot (A^2 + 1)}{(A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2} = 0 \quad R_2 - \frac{(A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2}{A \cdot B \cdot C \cdot (A^2 + 1)} = 0$$





$A = 0.63754$   $N_1 = 1.56852$   
 $B = 0.74149$   $N_2 = 1.34863$   
 $C = 0.88140$   $N_3 = 1.13456$

$R_1 = 0.27235$   
$$\frac{N_1 \cdot N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 + N_2^2 \cdot N_3^2 \cdot (N_1^2 + 1)^2} = 0.27235$$
$$\frac{(A \cdot B \cdot C \cdot (A^2 + 1))}{((A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2)} = 0.27235$$

$R_1 - \frac{N_1 \cdot N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 + N_2^2 \cdot N_3^2 \cdot (N_1^2 + 1)^2} = 0.00000$   
 $R_1 - \frac{(A \cdot B \cdot C \cdot (A^2 + 1))}{((A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2)} = 0.00000$   
$$\frac{(A \cdot B \cdot C \cdot (A^2 + 1))}{((A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2)} - \frac{N_1 \cdot N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 + N_2^2 \cdot N_3^2 \cdot (N_1^2 + 1)^2} = 0.00000$$

$R_2 = 3.67175$   
$$\frac{((A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2)}{(A \cdot B \cdot C \cdot (A^2 + 1))} = 3.67175$$
  
 $R_2 - \frac{((A^2 + 1)^2 + A^2 \cdot B^2 \cdot C^2)}{(A \cdot B \cdot C \cdot (A^2 + 1))} = 0.00000$

**2SMT5R1**

**Unit.  $ab := 1$     $N_1 := 1.75682$**

$$\mathbf{N}_2 := 1.14711 \quad \mathbf{N}_3 := 1.39579$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{be} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{bf} := \frac{\mathbf{N}_1 \cdot \mathbf{be}}{\mathbf{bN}_1}$$

$$\mathbf{df} := \frac{(\mathbf{N}_3 - \mathbf{bf})}{\mathbf{N}_3} \quad \mathbf{bk} := \frac{\mathbf{N}_2}{1 - \mathbf{df}} \quad \mathbf{R}_1 := \frac{1}{\mathbf{bk}}$$

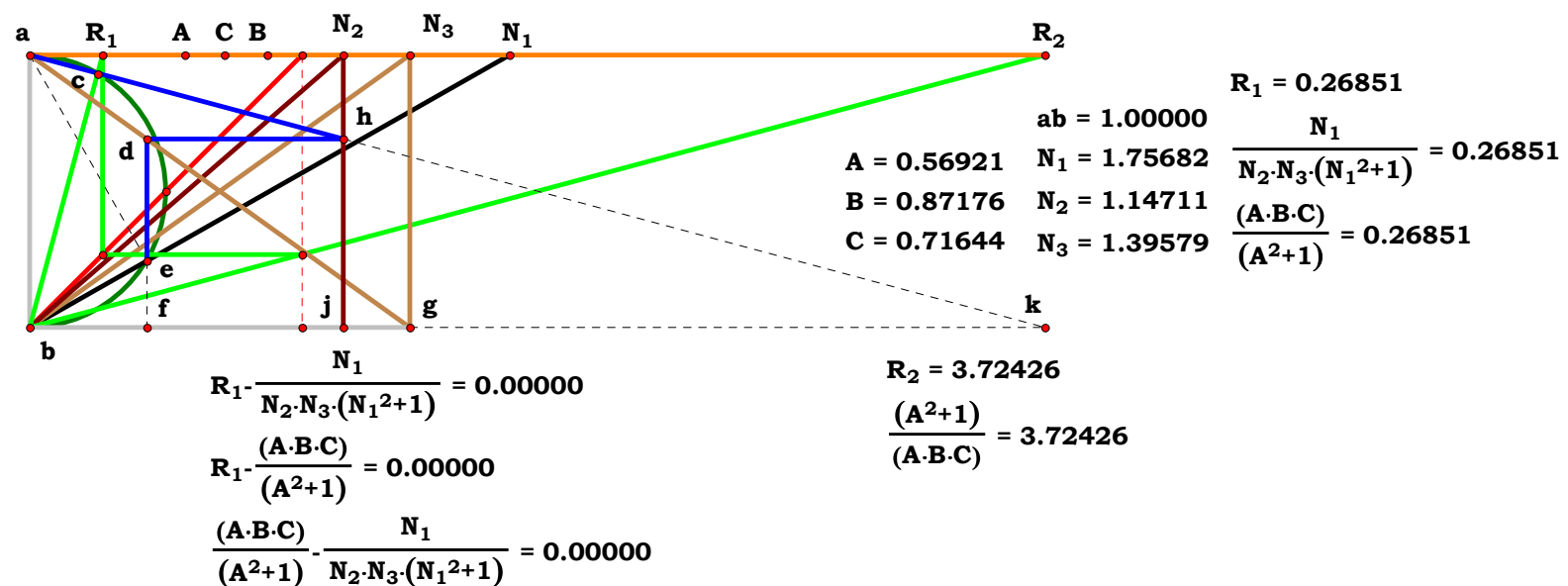
$$\mathbf{R}_1 = 0.268509 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

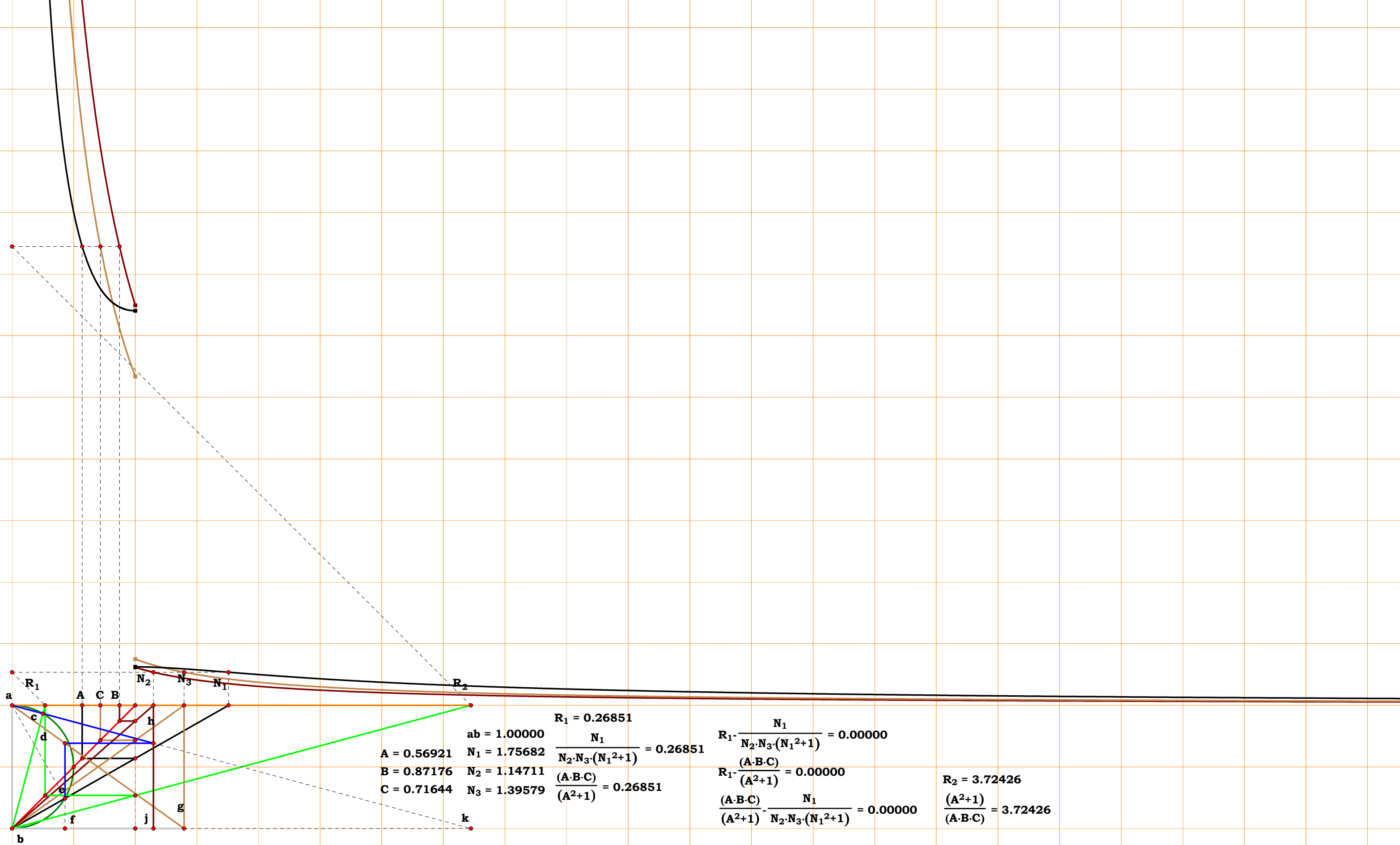
### Definitions.

$$\mathbf{R}_1 - \frac{\mathbf{N}_1}{\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot (\mathbf{N}_1^2 + 1)} = \mathbf{0}$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$R_1 - \frac{A \cdot B \cdot C}{A^2 + 1} = 0 \quad R_2 - \frac{A^2 + 1}{A \cdot B \cdot C} = 0$$







**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{N}_3 := 1.21479 \quad \mathbf{N}_4 := 1.84263$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3} \quad \mathbf{D} := \frac{1}{N_4}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{1} + \mathbf{N}_1^2} \quad \mathbf{be} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{bf} := \mathbf{N}_1 \cdot \frac{\mathbf{be}}{\mathbf{bN}_1}$$

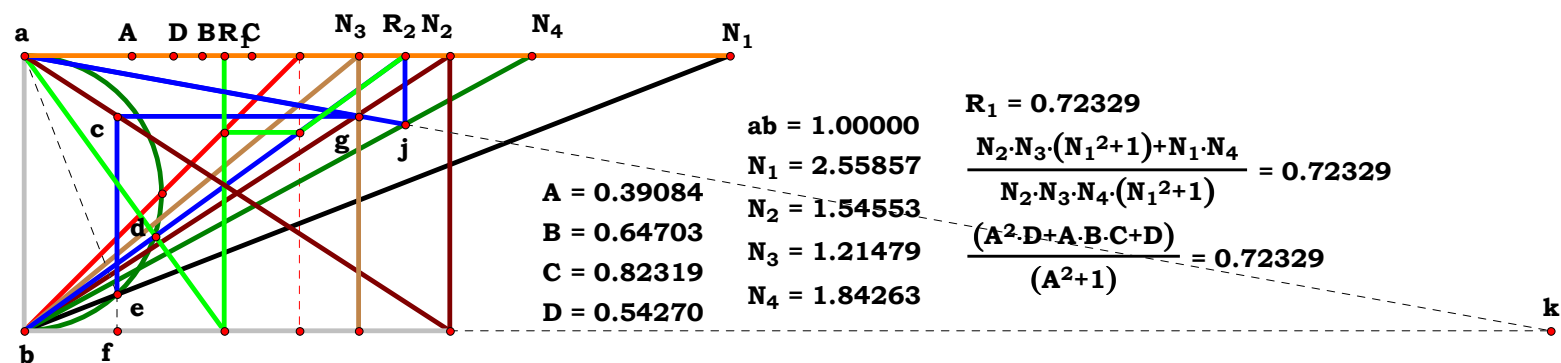
$$\mathbf{gN_3} := \frac{\mathbf{bf}}{N_2} \quad \mathbf{bk} := \frac{N_3}{\mathbf{gN_3}} \quad \mathbf{ah} := \frac{\mathbf{bk} \cdot N_4}{\mathbf{bk} + N_4}$$

$$\mathbf{R}_1 := \frac{1}{\mathbf{a}h} \quad \mathbf{R}_1 = 0.723289 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4}{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{A^2 \cdot D + B \cdot C \cdot A + D}{A^2 + 1} = 0 \quad R_2 - \frac{A^2 + 1}{A^2 \cdot D + B \cdot C \cdot A + D} = 0$$



$$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4}{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)} = 0.00000$$

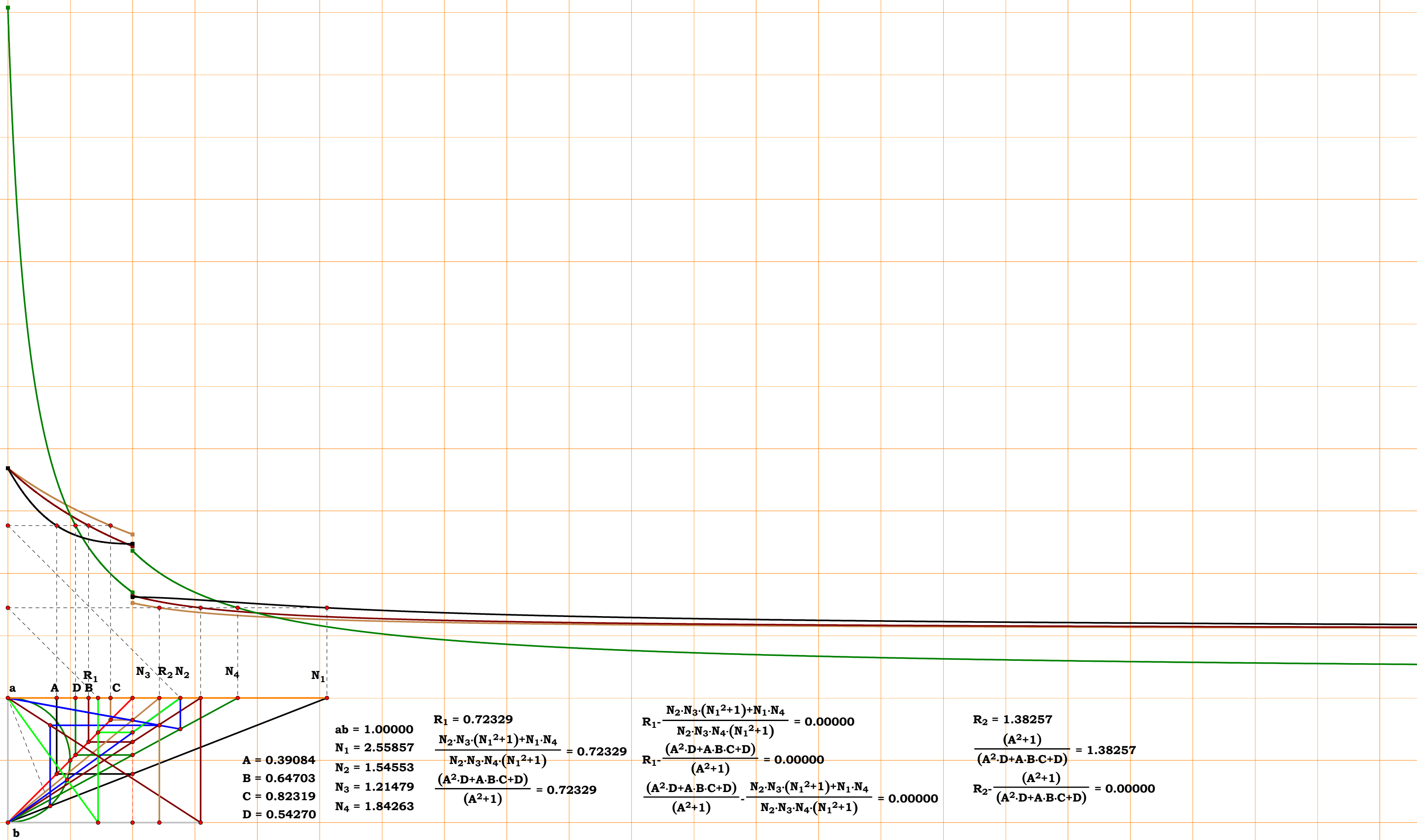
$$R_1 - \frac{(A^2 \cdot D + A \cdot B \cdot C + D)}{(A^2 + 1)} = 0.00000$$

$$\frac{(A^2 \cdot D + A \cdot B \cdot C + D)}{(A^2 + 1)} - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4}{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)} = 0.00000$$

$$R_2 = 1.38257$$

$$\frac{(A^2+1)}{(A^2 \cdot D + A \cdot B \cdot C + D)} = 1.38257$$

$$R_2 - \frac{(A^2+1)}{(A^2.D+A.B.C+D)} = 0.00000$$





2SMT5R3

Given.

Unit.  $ab := 1$

$N_1 := 2.04013$   $N_2 := 1.69096$

$N_3 := 1.28344$   $N_4 := 4.10394$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$   $bd := \frac{1}{bN_1}$   $be := N_1 \cdot \frac{bd}{bN_1}$

$fN_3 := \frac{be}{N_2}$   $bg := \frac{N_3}{fN_3}$   $R_1 := \frac{bg \cdot N_4}{bg + N_4}$

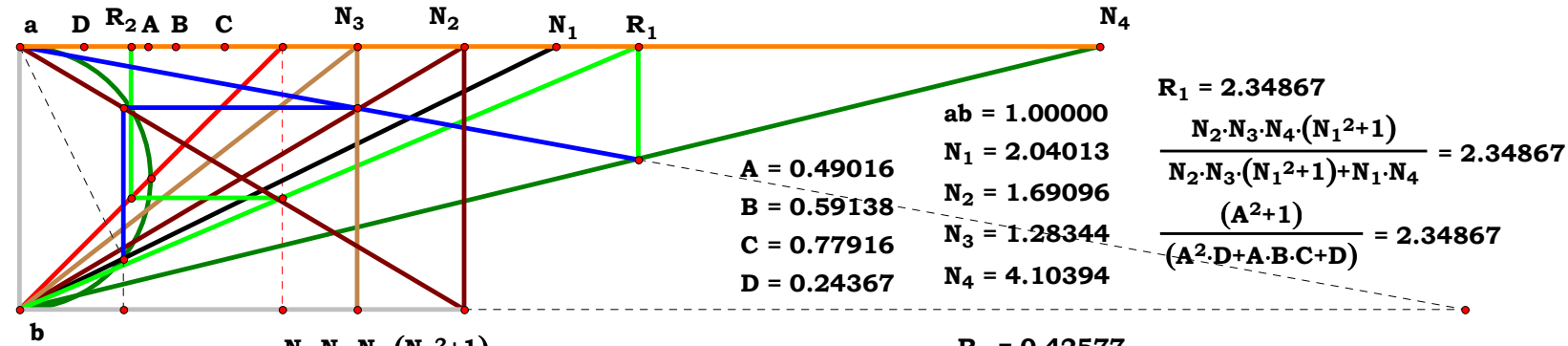
$R_1 = 2.348672$   $R_2 := \frac{1}{R_1}$

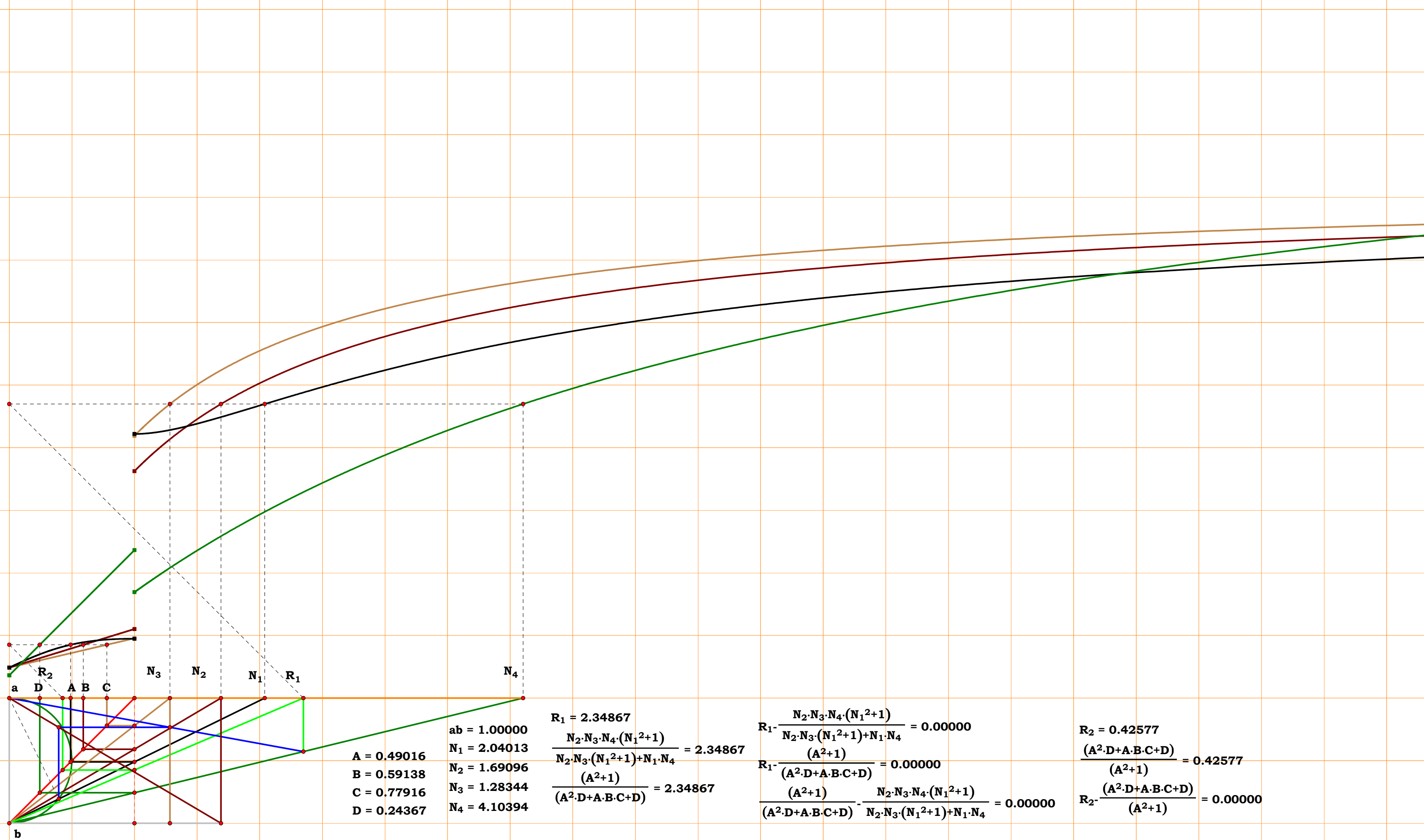
Definitions.

$$R_1 - \frac{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)}{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{(A^2 + 1)}{A^2 \cdot D + A \cdot B \cdot C + D} = 0 \quad R_2 - \frac{A^2 \cdot D + A \cdot B \cdot C + D}{(A^2 + 1)} = 0$$





**A = 0.49016**  
**B = 0.59138**  
**C = 0.77916**  
**D = 0.24367**

**ab = 1.00000**  
**N<sub>1</sub> = 2.04013**  
**N<sub>2</sub> = 1.69096**  
**N<sub>3</sub> = 1.28344**  
**N<sub>4</sub> = 4.10394**

$$\begin{aligned}
 R_1 &= 2.34867 \\
 \frac{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)}{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4} &= 2.34867 \\
 \frac{(A^2 + 1)}{(A^2 \cdot D + A \cdot B \cdot C + D)} &= 2.34867
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)}{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4} &= 0.00000 \\
 R_1 - \frac{(A^2 + 1)}{(A^2 \cdot D + A \cdot B \cdot C + D)} &= 0.00000 \\
 \frac{(A^2 + 1)}{(A^2 \cdot D + A \cdot B \cdot C + D)} - \frac{N_2 \cdot N_3 \cdot N_4 \cdot (N_1^2 + 1)}{N_2 \cdot N_3 \cdot (N_1^2 + 1) + N_1 \cdot N_4} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.42577 \\
 \frac{(A^2 \cdot D + A \cdot B \cdot C + D)}{(A^2 + 1)} &= 0.42577 \\
 R_2 - \frac{(A^2 \cdot D + A \cdot B \cdot C + D)}{(A^2 + 1)} &= 0.00000
 \end{aligned}$$



Given.

Unit.    $ab := 1$       $N_1 := 2.53257$

$N_2 := 1.23374$      $N_3 := 1.78075$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$      $bd := \frac{1}{bN_1}$      $be := \frac{N_1 \cdot bd}{bN_1}$

$ce := \frac{(N_3 - be)}{N_3}$       $R_1 := \frac{N_2}{ce}$

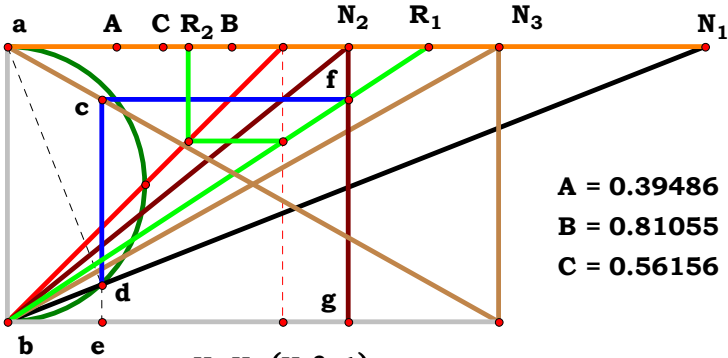
$R_1 = 1.52658$       $R_2 := \frac{1}{R_1}$

Definitions.

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3 + N_3 - N_1} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{(A^2 + 1)}{B \cdot (A^2 - A \cdot C + 1)} = 0$       $R_2 - \frac{B \cdot (A^2 - A \cdot C + 1)}{(A^2 + 1)} = 0$



$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000$

$R_1 - \frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} = 0.00000$

$\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000$

$R_1 = 1.52658$

$ab = 1.00000$      $N_1 = 2.53257$      $N_2 = 1.23374$      $N_3 = 1.78075$

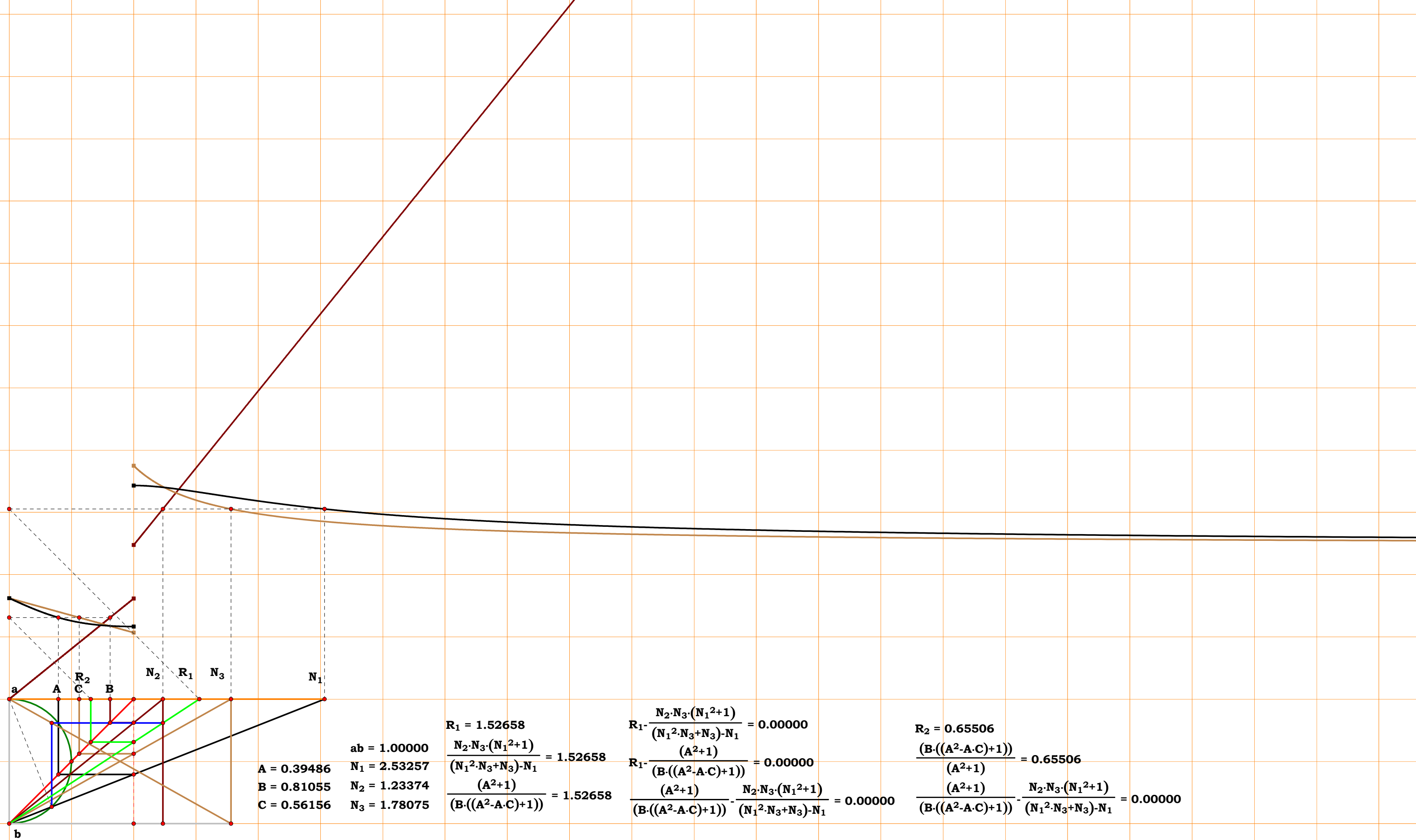
$\frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 1.52658$

$\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} = 1.52658$

$R_2 = 0.65506$

$\frac{(B \cdot ((A^2 - A \cdot C) + 1))}{(A^2 + 1)} = 0.65506$

$\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000$



**A = 0.39486**  
**B = 0.81055**  
**C = 0.56156**

**ab = 1.00000**  
**N<sub>1</sub> = 2.53257**  
**N<sub>2</sub> = 1.23374**  
**N<sub>3</sub> = 1.78075**

$$\begin{aligned}
 &R_1 = 1.52658 \\
 &\frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 1.52658 \\
 &\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} = 1.52658
 \end{aligned}$$

$$\begin{aligned}
 &R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000 \\
 &R_1 - \frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} = 0.00000 \\
 &\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000
 \end{aligned}$$

$$\begin{aligned}
 &R_2 = 0.65506 \\
 &\frac{(B \cdot ((A^2 - A \cdot C) + 1))}{(A^2 + 1)} = 0.65506 \\
 &\frac{(A^2 + 1)}{(B \cdot ((A^2 - A \cdot C) + 1))} - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{(N_1^2 \cdot N_3 + N_3) - N_1} = 0.00000
 \end{aligned}$$

**2SMT5R5**

**Unit.**   **ab** := 1      **N<sub>1</sub>** := 1.62256

$$\mathbf{N}_2 := 1.14729 \quad \mathbf{N}_3 := 1.34202$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bd} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{be} := \frac{\mathbf{N}_1 \cdot \mathbf{bd}}{\mathbf{bN}_1}$$

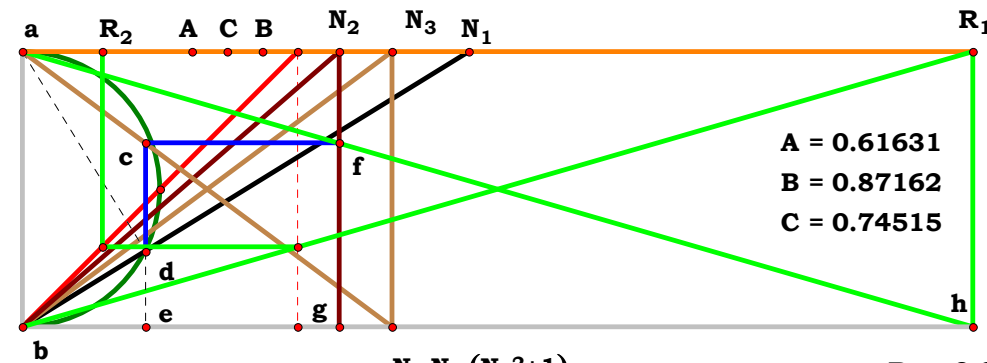
$$\mathbf{ce} := \frac{(\mathbf{N}_3 - \mathbf{be})}{\mathbf{N}_3} \quad \mathbf{R}_1 := \frac{\mathbf{N}_2}{1 - \mathbf{ce}}$$

$$\mathbf{R}_1 = 3.447157 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 + \mathbf{1})}{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}}{(\mathbf{A}^2 + \mathbf{1})} = 0$$



$$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} = 0.00000$$

$$R_1 - \frac{(A^2+1)}{(A \cdot B \cdot C)} = 0.00000$$

$$\frac{(A^2+1)}{(A \cdot B \cdot C)} - \frac{N_2 \cdot N_3 \cdot (N_1^2+1)}{N_1} = 0.00000$$

$$R_2 = 0.29009$$

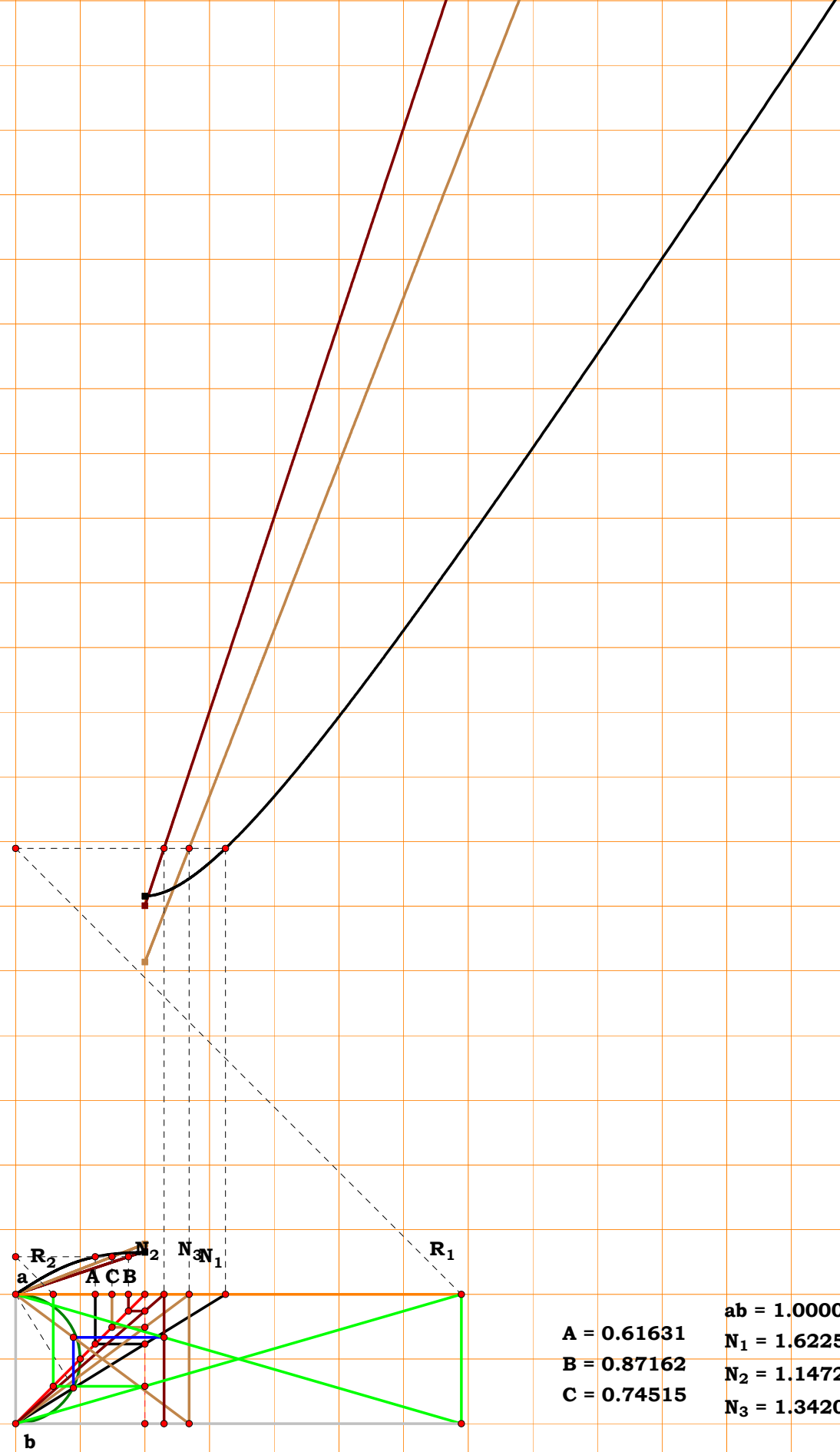
$$\frac{(A \cdot B \cdot C)}{(A^2 + 1)} = 0.29009$$

$$R_2 - \frac{(A \cdot B \cdot C)}{(A^2 + 1)} = 0.00000$$

$$R_1 = 3.44715$$

$$\frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} = 3.44715$$

$$\frac{(A^2+1)}{(A \cdot B \cdot C)} = 3.44715$$



$$\begin{aligned} A &= 0.61631 \\ B &= 0.87162 \\ C &= 0.74515 \end{aligned}$$

$$\begin{aligned} ab &= 1.00000 \\ N_1 &= 1.62256 \\ N_2 &= 1.14729 \\ N_3 &= 1.34202 \end{aligned}$$

$$\begin{aligned} R_1 &= 3.44715 \\ \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} &= 3.44715 \\ \frac{(A^2 + 1)}{(A \cdot B \cdot C)} &= 3.44715 \end{aligned}$$

$$\begin{aligned} R_1 \cdot \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} &= 0.00000 \\ R_1 \cdot \frac{(A^2 + 1)}{(A \cdot B \cdot C)} &= 0.00000 \\ \frac{(A^2 + 1)}{(A \cdot B \cdot C)} \cdot \frac{N_2 \cdot N_3 \cdot (N_1^2 + 1)}{N_1} &= 0.00000 \end{aligned}$$

$$\begin{aligned} R_2 &= 0.29009 \\ \frac{(A \cdot B \cdot C)}{(A^2 + 1)} &= 0.29009 \\ R_2 \cdot \frac{(A \cdot B \cdot C)}{(A^2 + 1)} &= 0.00000 \end{aligned}$$

## 2SMT6R0

**Unit.**  $ab := 1$   $N_1 := 2.99980$

$$\mathbf{N}_2 := 1.21721 \quad \mathbf{N}_3 := 1.87769$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{gh} := \frac{\mathbf{N}_3}{\mathbf{N}_3 + \mathbf{N}_1} \quad \mathbf{ce} := \mathbf{N}_2 \cdot \mathbf{gh} \quad \mathbf{de} := \frac{1}{2}$$

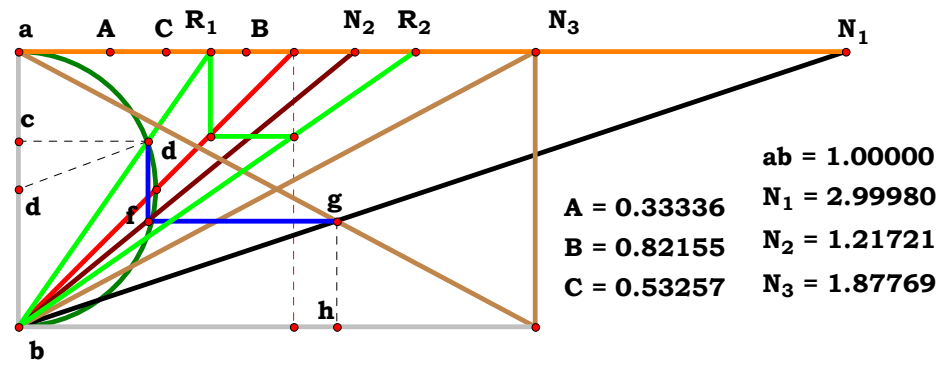
$$\mathbf{cd} := \sqrt{\mathbf{de}^2 - \mathbf{ce}^2} \quad \mathbf{bc} := \mathbf{de} + \mathbf{cd} \quad \mathbf{R}_1 := \frac{\mathbf{ce}}{\mathbf{bc}}$$

$$\mathbf{R}_1 = 0.694801 \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

$$R_1 - \frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{\left[ N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot (2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3 + N_3)} \right] \cdot (N_1 + N_3)} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$\mathbf{R}_1 - \frac{2 \cdot \mathbf{A}}{\sqrt{[\mathbf{B} \cdot (\mathbf{A} + \mathbf{C}) - 2 \cdot \mathbf{A}] \cdot [\mathbf{B} \cdot (\mathbf{A} + \mathbf{C}) + 2 \cdot \mathbf{A}] + \mathbf{B} \cdot (\mathbf{A} + \mathbf{C})}} = 0 \quad \mathbf{R}_2 - \frac{\sqrt{[\mathbf{B} \cdot (\mathbf{A} + \mathbf{C}) - 2 \cdot \mathbf{A}] \cdot [\mathbf{B} \cdot (\mathbf{A} + \mathbf{C}) + 2 \cdot \mathbf{A}] + \mathbf{B} \cdot (\mathbf{A} + \mathbf{C})}}{2 \cdot \mathbf{A}} = 0$$



$$R_1 - \frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.00000$$

$$R_1 - \frac{(2 \cdot A)}{(\sqrt{(B \cdot (A+C) - 2 \cdot A) \cdot (B \cdot (A+C) + 2 \cdot A) + B \cdot (A+C)})} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{(B \cdot (A+C) \cdot 2 \cdot A) \cdot (B \cdot (A+C) + 2 \cdot A) + B \cdot (A+C)})} - \frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.00000$$

$$R_1 = 0.69480$$

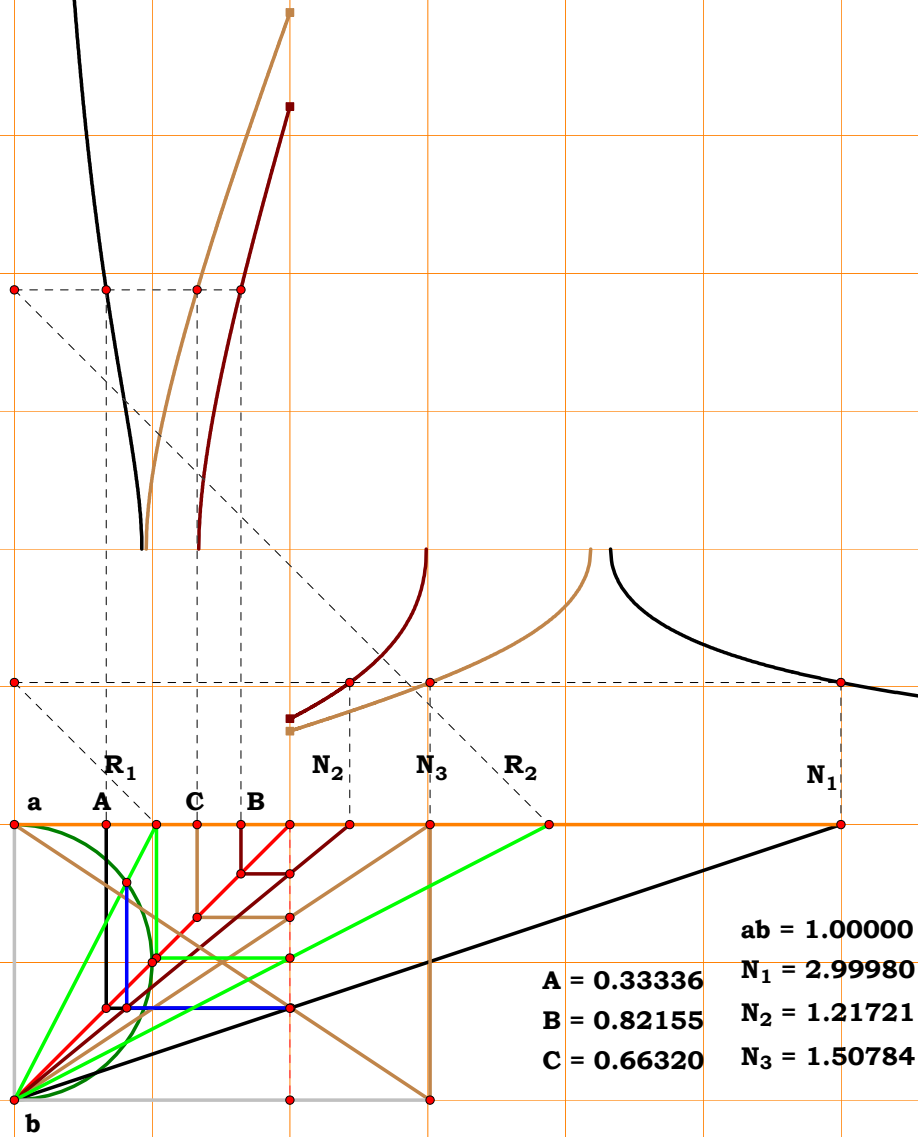
$$\frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.69480$$

$$\frac{(2 \cdot A)}{(\sqrt{(B \cdot (A+C) - 2 \cdot A) \cdot (B \cdot (A+C) + 2 \cdot A)} + B \cdot (A+C))} = 0.69480$$

$$R_2 = 1.43926$$

$$\frac{(\sqrt{(B \cdot (A+C) - 2 \cdot A) \cdot (B \cdot (A+C) + 2 \cdot A)} + B \cdot (A+C))}{(2 \cdot A)} = 1.43926$$

$$R_2 - \frac{(\sqrt{(B \cdot (A+C) - 2 \cdot A) \cdot (B \cdot (A+C) + 2 \cdot A)} + B \cdot (A+C))}{(2 \cdot A)} = 0.00000$$



$$R_1 - \frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.00000$$

$$R_1 - \frac{(2 \cdot A)}{(\sqrt{(B \cdot (A + C) - 2 \cdot A) \cdot (B \cdot (A + C) + 2 \cdot A) + B \cdot (A + C)})} = 0.00000$$

$$\frac{(2 \cdot A)}{(\sqrt{(B \cdot (A + C) - 2 \cdot A) \cdot (B \cdot (A + C) + 2 \cdot A) + B \cdot (A + C)})} - \frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.00000$$

$$R_1 = 0.51527$$

$$\frac{2 \cdot N_2 \cdot N_3 \cdot (N_1 + N_3)}{(N_1 + N_3 + \sqrt{N_1^2 + N_3 \cdot ((2 \cdot N_1 - 4 \cdot N_2^2 \cdot N_3) + N_3)}) \cdot (N_1 + N_3)} = 0.51527$$

$$\frac{(2 \cdot A)}{(\sqrt{(B \cdot (A + C) - 2 \cdot A) \cdot (B \cdot (A + C) + 2 \cdot A) + B \cdot (A + C)})} = 0.51527$$

$$R_2 = 1.94072$$

$$\frac{(\sqrt{(B \cdot (A + C) - 2 \cdot A) \cdot (B \cdot (A + C) + 2 \cdot A) + B \cdot (A + C)})}{(2 \cdot A)} = 1.94072$$

$$R_2 - \frac{(\sqrt{(B \cdot (A + C) - 2 \cdot A) \cdot (B \cdot (A + C) + 2 \cdot A) + B \cdot (A + C)})}{(2 \cdot A)} = 0.00000$$



2SMT6R1

Given.

Unit.  $ab := 1$      $N_1 := 3.50608$

$N_2 := 1.58420$      $N_3 := 1.90578$

$N_4 := 2.55357$      $N_5 := 1.30650$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

$D := \frac{1}{N_4}$      $E := \frac{1}{N_5}$

Descriptions.

$hj := \frac{N_2}{N_1 + N_2}$      $bj := N_3 \cdot hj$      $bc := 1 - \frac{bj}{N_4}$

$ce := \sqrt{bc \cdot (1 - bc)}$      $ak := \frac{ce}{bc}$      $ad := 1 - \frac{ak}{N_5}$

$df := \sqrt{ad \cdot (1 - ad)}$      $R_1 := \frac{df}{1 - ad}$

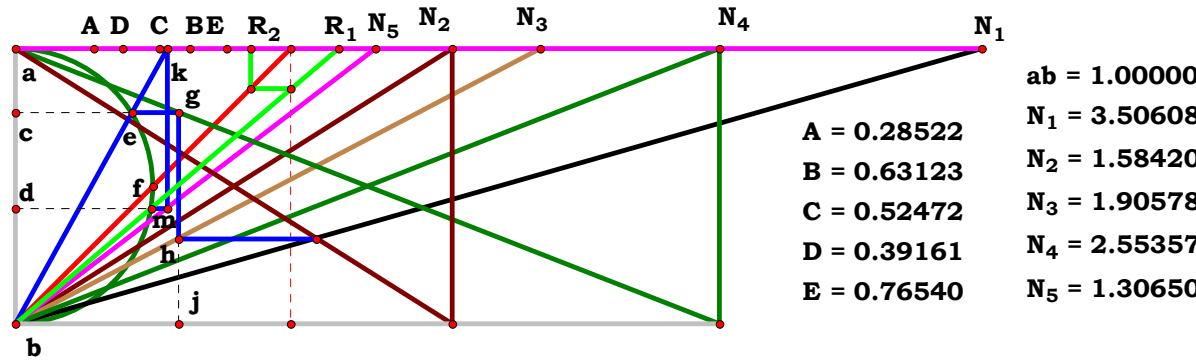
$R_1 = 1.172728$      $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{\sqrt{\left[ N_5 \cdot \sqrt{N_2 \cdot N_3 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)} - N_2 \cdot N_3 \right] \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}}{\sqrt{N_4 \cdot N_2^2 \cdot N_3 - N_2^2 \cdot N_3^2 + N_1 \cdot N_4 \cdot N_2 \cdot N_3}} = 0$$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$      $N_4 - \frac{1}{D} = 0$      $N_5 - \frac{1}{E} = 0$

$$R_1 - \frac{\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{A \cdot C - A \cdot D} + B \cdot C - E \cdot \sqrt{A \cdot D})}}}{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}} = 0 \quad R_2 - \frac{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}}{\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{A \cdot C - A \cdot D} + B \cdot C - E \cdot \sqrt{A \cdot D})}}} = 0$$



$$R_1 - \frac{\sqrt{\left( N_5 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} - N_2 \cdot N_3 \right) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{\sqrt{(N_2^2 \cdot N_3 \cdot N_4 - N_2^2 \cdot N_3^2) + N_1 \cdot N_2 \cdot N_3 \cdot N_4}} = 0.00000$$

$$R_1 - \frac{(\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{(A \cdot C - A \cdot D) + B \cdot C - E \cdot \sqrt{A \cdot D})}})}}{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}} = 0.00000$$

$$\frac{(\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{(A \cdot C - A \cdot D) + B \cdot C - E \cdot \sqrt{A \cdot D})}})}}{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}} - \frac{\sqrt{\left( N_5 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} - N_2 \cdot N_3 \right) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{\sqrt{(N_2^2 \cdot N_3 \cdot N_4 - N_2^2 \cdot N_3^2) + N_1 \cdot N_2 \cdot N_3 \cdot N_4}} = 0.00000$$

$R_1 = 1.17273$

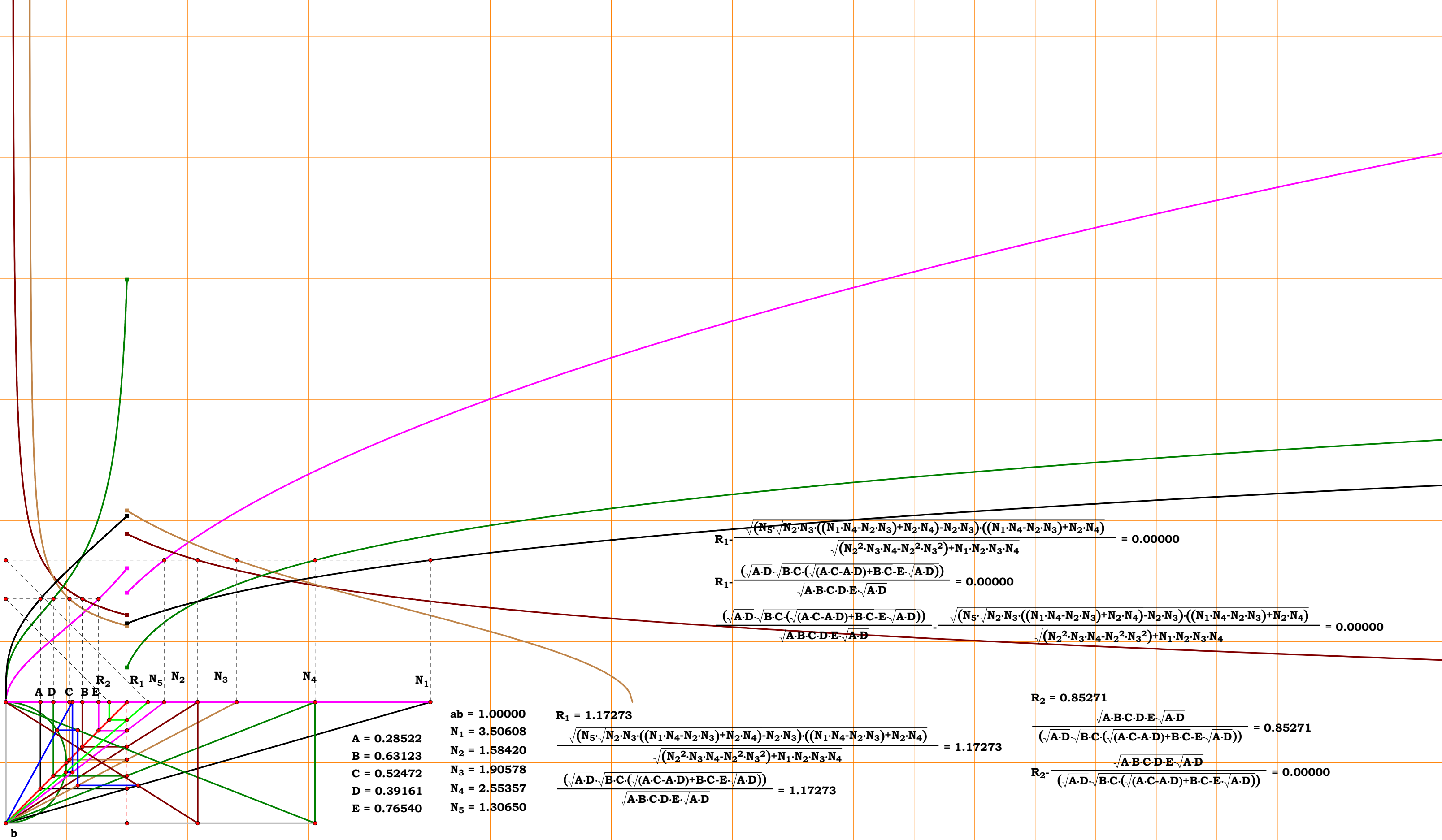
$$\frac{\sqrt{\left( N_5 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} - N_2 \cdot N_3 \right) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{\sqrt{(N_2^2 \cdot N_3 \cdot N_4 - N_2^2 \cdot N_3^2) + N_1 \cdot N_2 \cdot N_3 \cdot N_4}} = 1.17273$$

$$\frac{(\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{(A \cdot C - A \cdot D) + B \cdot C - E \cdot \sqrt{A \cdot D})}})}}{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}} = 1.17273$$

$R_2 = 0.85271$

$$\frac{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}}{(\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{(A \cdot C - A \cdot D) + B \cdot C - E \cdot \sqrt{A \cdot D})}})}} = 0.85271$$

$$R_2 - \frac{\sqrt{A \cdot B \cdot C \cdot D \cdot E \cdot \sqrt{A \cdot D}}}{(\sqrt{A \cdot D \cdot \sqrt{B \cdot C \cdot (\sqrt{(A \cdot C - A \cdot D) + B \cdot C - E \cdot \sqrt{A \cdot D})}})}} = 0.00000$$





2SMT6R2

Given.

Unit.  $ab := 1$

$$N_1 := 3.67140 \quad N_2 := 2.28983$$

$$N_3 := 1.15231 \quad N_4 := 1.82935$$

$$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3} \quad D := \frac{1}{N_4}$$

Descriptions.

$$bd := \frac{N_2}{N_1 + N_2} \quad df := \sqrt{bd \cdot (1 - bd)}$$

$$ao := \frac{df}{bd} \quad bj := \frac{ao \cdot N_3}{ao + N_3} \quad bc := \frac{bj}{N_4}$$

$$ce := \sqrt{bc \cdot (1 - bc)} \quad R_1 := \frac{ce}{bc}$$

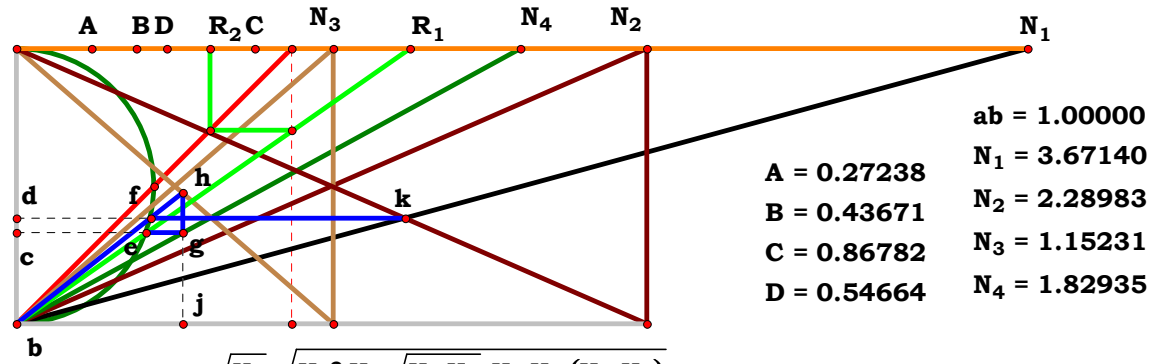
$$R_1 = 1.425576 \quad R_2 := \frac{1}{R_1}$$

Definitions.

$$R_1 - \frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 - N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{(A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}}}{\sqrt{B} \cdot \sqrt{A \cdot D}} = 0 \quad R_2 - \frac{\sqrt{B} \cdot \sqrt{A \cdot D}}{(A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}}} = 0$$



$$R_1 - \frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 - N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_1 - \frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} = 0.00000$$

$$\frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} - \frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 - N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_1 = 1.42557$$

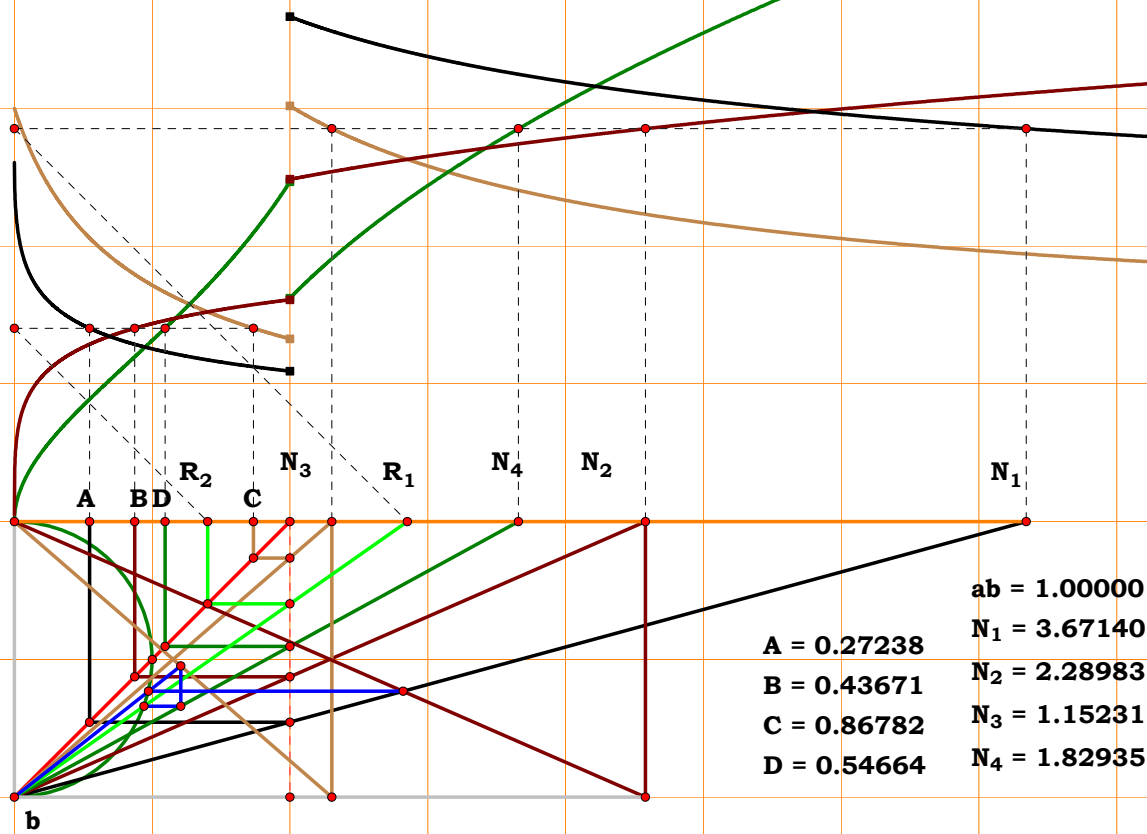
$$\frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 - N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 1.42557$$

$$\frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} = 1.42557$$

$$R_2 = 0.70147$$

$$\frac{\sqrt{A \cdot B \cdot D}}{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)} = 0.70147$$

$$R_2 - \frac{\sqrt{A \cdot B \cdot D}}{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)} = 0.00000$$



$A = 0.27238$   
 $B = 0.43671$   
 $C = 0.86782$   
 $D = 0.54664$

$ab = 1.00000$   
 $N_1 = 3.67140$   
 $N_2 = 2.28983$   
 $N_3 = 1.15231$   
 $N_4 = 1.82935$

$$R_1 = 1.42557$$

$$\frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 \cdot N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 1.42557$$

$$\frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} = 1.42557$$

$$R_2 = 0.70147$$

$$\frac{\sqrt{A \cdot B \cdot D}}{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)} = 0.70147$$

$$R_2 \cdot \frac{\sqrt{A \cdot B \cdot D}}{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)} = 0.00000$$

$$R_1 \cdot \frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 \cdot N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 0.00000$$

$$R_1 \cdot \frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} = 0.00000$$

$$\frac{\left( (A \cdot B)^{\frac{1}{4}} \cdot \sqrt{A + \sqrt{A \cdot B \cdot (C - D)}} \right)}{\sqrt{A \cdot B \cdot D}} \cdot \frac{\sqrt{N_2} \cdot \sqrt{N_3^2 \cdot N_4} \cdot \sqrt{N_1 \cdot N_2 \cdot N_1 \cdot N_3 \cdot (N_3 - N_4)}}{N_3 \cdot \sqrt{N_1 \cdot N_2}} = 0.00000$$



2SMT6R3

Given.

Unit.  $ab := 1$

$N_1 := 2.88263$     $N_2 := 1.33703$

$N_3 := 1.96283$     $N_4 := 2.42546$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$fg := \frac{N_2}{N_1 + N_2}$     $bg := N_3 \cdot fg$     $bc := 1 - \frac{bg}{N_4}$

$cd := \sqrt{bc \cdot (1 - bc)}$     $R_1 := \frac{cd}{bc}$

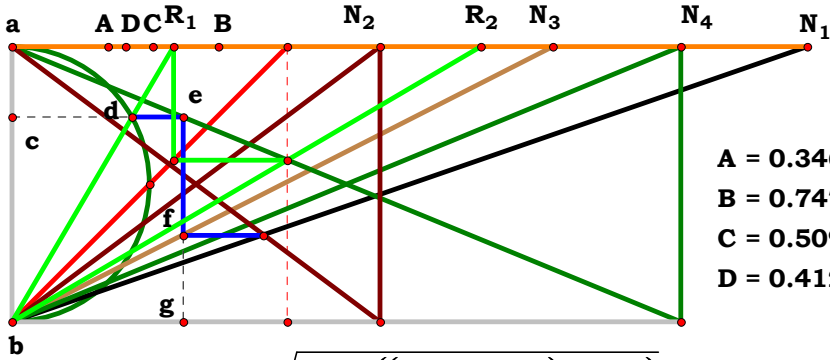
$R_1 = 0.587236$     $R_2 := \frac{1}{R_1}$

Definitions.

$$R_1 - \frac{\sqrt{N_2 \cdot N_3 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}}{N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{A \cdot D}{\sqrt{A \cdot D} \cdot \sqrt{A \cdot C - A \cdot D + B \cdot C}} = 0 \quad R_2 - \frac{\sqrt{A \cdot D} \cdot \sqrt{A \cdot C - A \cdot D + B \cdot C}}{A \cdot D} = 0$$



A = 0.34691  
B = 0.74792  
C = 0.50947  
D = 0.41229

ab = 1.00000  
N1 = 2.88263  
N2 = 1.33703  
N3 = 1.96283  
N4 = 2.42546

$$R_1 - \frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} = 0.00000$$

$$R_1 - \frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} = 0.00000$$

$$\frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} - \frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} = 0.00000$$

$R_1 = 0.58724$

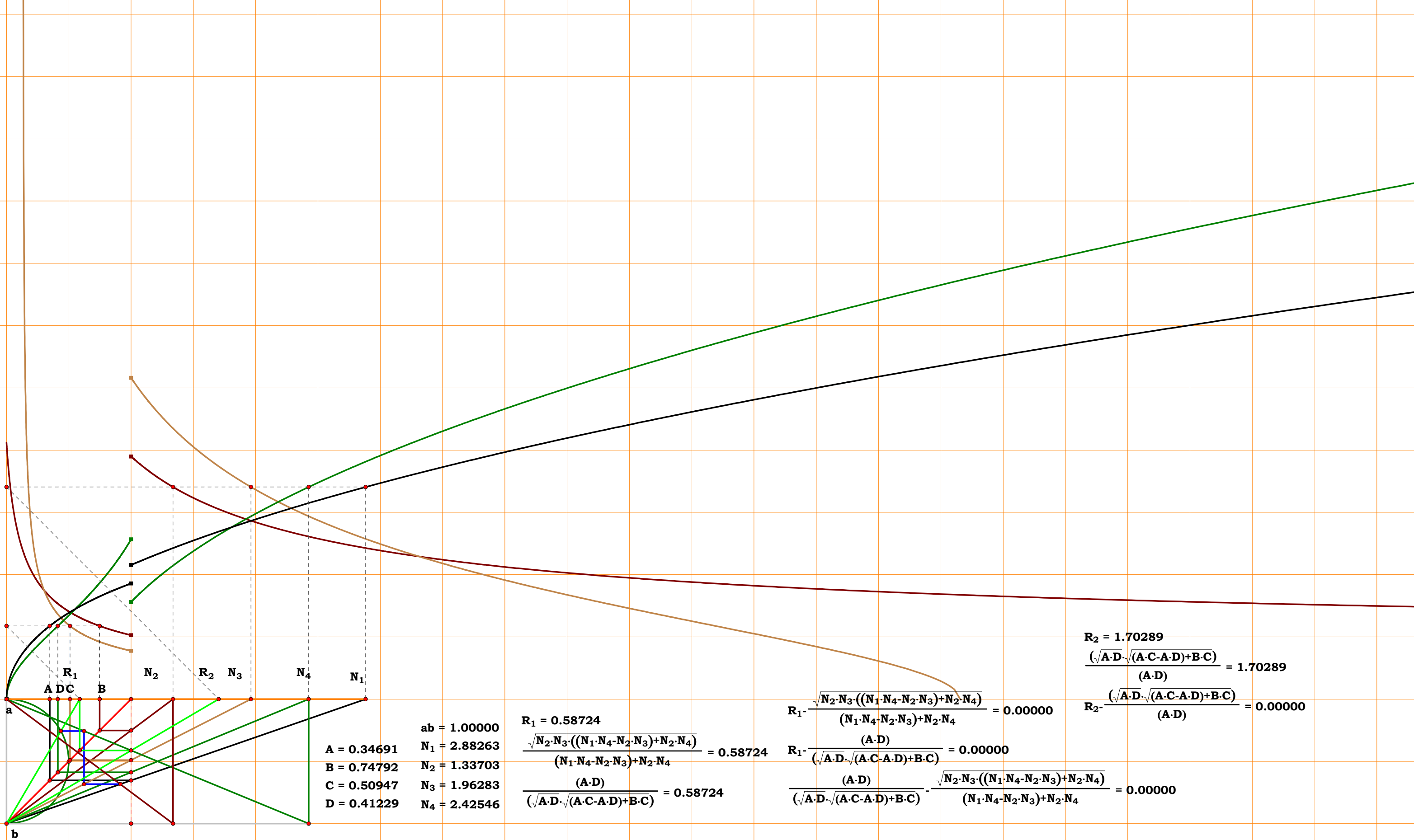
$$\frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} = 0.58724$$

$$\frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} = 0.58724$$

$R_2 = 1.70289$

$$\frac{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})}{(A \cdot D)} = 1.70289$$

$$R_2 - \frac{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})}{(A \cdot D)} = 0.00000$$



**A = 0.34691**  
**B = 0.74792**  
**C = 0.50947**  
**D = 0.41229**

**ab = 1.00000**  
**N<sub>1</sub> = 2.88263**  
**N<sub>2</sub> = 1.33703**  
**N<sub>3</sub> = 1.96283**  
**N<sub>4</sub> = 2.42546**

$$\begin{aligned}
 R_1 &= 0.58724 \\
 \frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} &= 0.58724 \\
 \frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} &= 0.58724
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} &= 0.00000 \\
 \frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} &= 0.00000 \\
 \frac{(A \cdot D)}{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})} - \frac{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{(N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 1.70289 \\
 \frac{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})}{(A \cdot D)} &= 1.70289 \\
 R_2 - \frac{(\sqrt{A \cdot D} \cdot \sqrt{(A \cdot C - A \cdot D) + B \cdot C})}{(A \cdot D)} &= 0.00000
 \end{aligned}$$



2SMT6R4

Given.

Unit.  $ab := 1$      $N_1 := 5.54827$

$N_2 := 2.06582$      $N_3 := 1.43432$

$N_4 := 1.76525$      $N_5 := 3.76850$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$      $D := \frac{1}{N_4}$      $E := \frac{1}{N_5}$

Descriptions.

$de := \frac{N_2}{N_1 + N_2}$      $be := N_3 \cdot de$      $gh := \frac{be}{N_4}$

$ag := N_5 \cdot (1 - gh)$      $bh := \sqrt{1 + ag^2}$      $bf := \frac{1}{bh}$

$R_1 := \frac{ag \cdot bf}{bh}$      $R_2 := \frac{1}{R_1}$

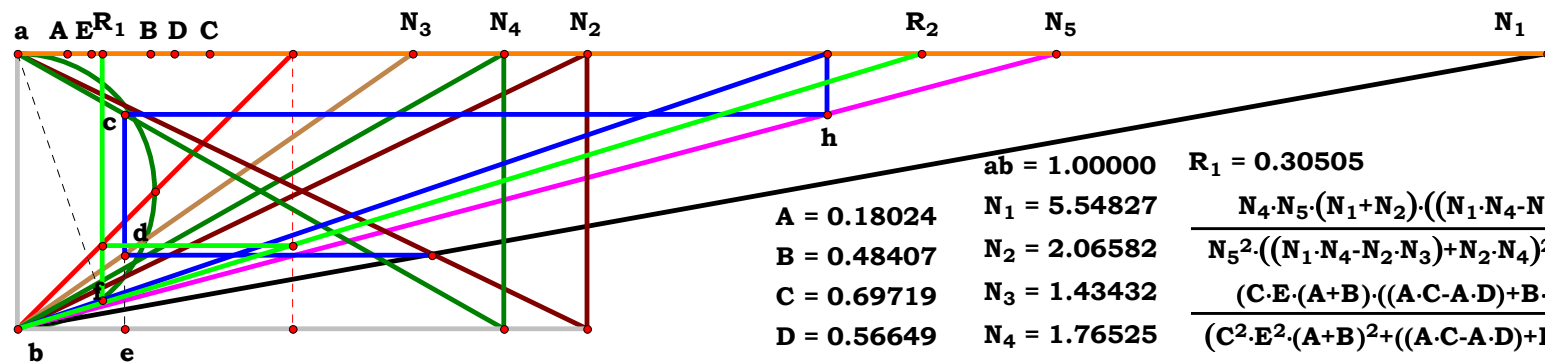
$R_1 = 0.305052$

Definitions.

$$R_1 - \frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}{N_5^2 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0$$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$      $N_4 - \frac{1}{D} = 0$      $N_5 - \frac{1}{E} = 0$

$$R_1 - \frac{C \cdot E \cdot (A + B) \cdot (A \cdot C - A \cdot D + B \cdot C)}{C^2 \cdot E^2 \cdot (A + B)^2 + (A \cdot C - A \cdot D + B \cdot C)^2} = 0 \quad R_2 - \frac{C^2 \cdot E^2 \cdot (A + B)^2 + (A \cdot C - A \cdot D + B \cdot C)^2}{C \cdot E \cdot (A + B) \cdot (A \cdot C - A \cdot D + B \cdot C)} = 0$$



$ab = 1.00000$      $R_1 = 0.30505$

$A = 0.18024$      $N_1 = 5.54827$      $\frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.30505$

$B = 0.48407$      $N_2 = 2.06582$

$C = 0.69719$      $N_3 = 1.43432$      $\frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} = 0.30505$

$D = 0.56649$      $N_4 = 1.76525$

$E = 0.26536$      $N_5 = 3.76850$

$R_1 - \frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.00000$

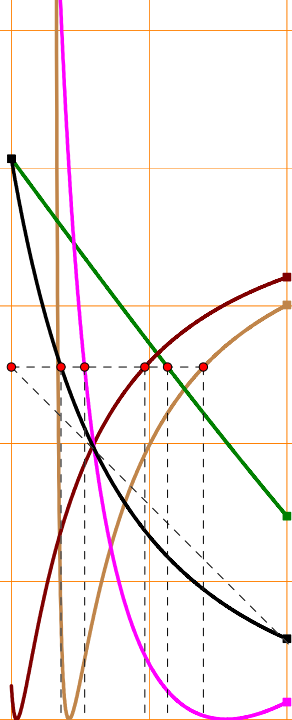
$R_1 - \frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} = 0.00000$

$\frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} - \frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.00000$

$R_2 = 3.27812$

$\frac{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)}{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))} = 3.27812$

$R_2 - \frac{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)}{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))} = 0.00000$



$$R_1 - \frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.00000$$

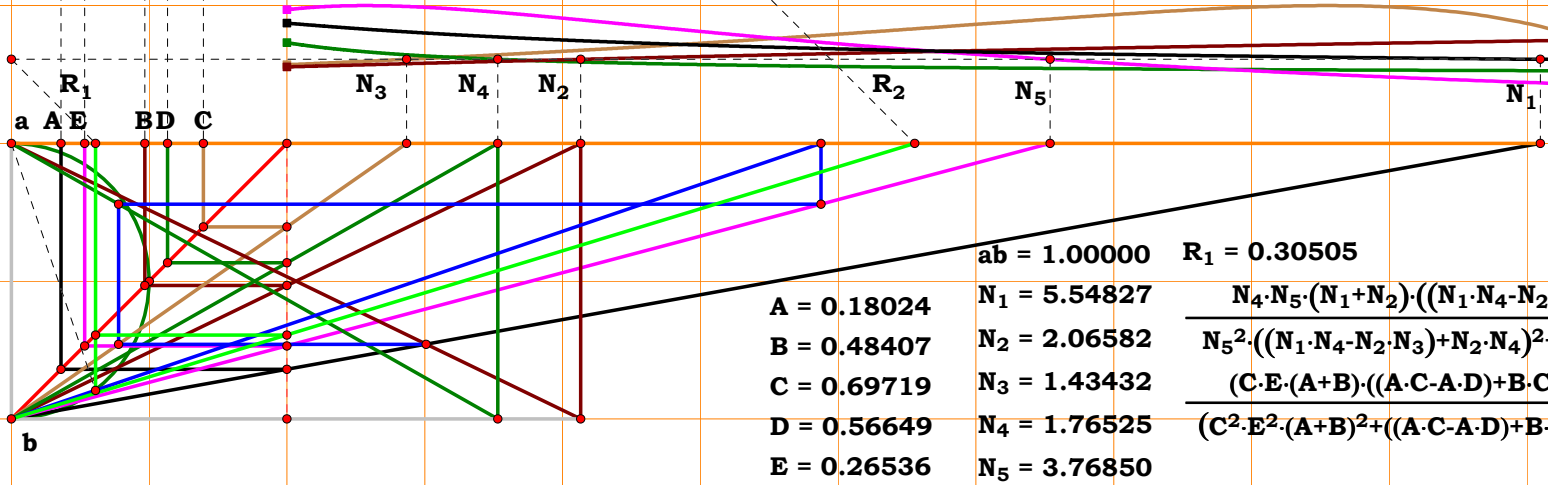
$$R_1 - \frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} = 0.00000$$

$$\frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} - \frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.00000$$

$$R_2 = 3.27812$$

$$\frac{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)}{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))} = 3.27812$$

$$R_2 - \frac{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)}{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))} = 0.00000$$



A = 0.18024  
B = 0.48407  
C = 0.69719  
D = 0.56649  
E = 0.26536

ab = 1.00000  
N1 = 5.54827  
N2 = 2.06582  
N3 = 1.43432  
N4 = 1.76525  
N5 = 3.76850

R1 = 0.30505

$$\frac{N_4 \cdot N_5 \cdot (N_1 + N_2) \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{N_5^2 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)^2 + N_4^2 \cdot (N_1 + N_2)^2} = 0.30505$$

$$\frac{(C \cdot E \cdot (A + B) \cdot ((A \cdot C - A \cdot D) + B \cdot C))}{(C^2 \cdot E^2 \cdot (A + B)^2 + ((A \cdot C - A \cdot D) + B \cdot C)^2)} = 0.30505$$



2SMT6R5

Given.

Unit.  $ab := 1$

$$N_1 := 3.40337 \quad N_2 := 1.34110 \quad N_3 := 2.06655$$

$$N_4 := 1.88939 \quad N_5 := 1.14022 \quad N_6 := 2.70906$$

$$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3}$$

$$D := \frac{1}{N_4} \quad E := \frac{1}{N_5} \quad F := \frac{1}{N_6}$$

Descriptions.

$$fg := \frac{N_2}{N_1 + N_2} \quad bg := N_3 \cdot fg \quad ac := \frac{bg}{N_4}$$

$$cd := \sqrt{ac \cdot (1 - ac)} \quad ah := \frac{cd}{1 - ac} \quad hj := 1 - \frac{ah}{N_5}$$

$$R_1 := N_6 \cdot (1 - hj) \quad R_2 := \frac{1}{R_1} \quad R_1 = 1.589437$$

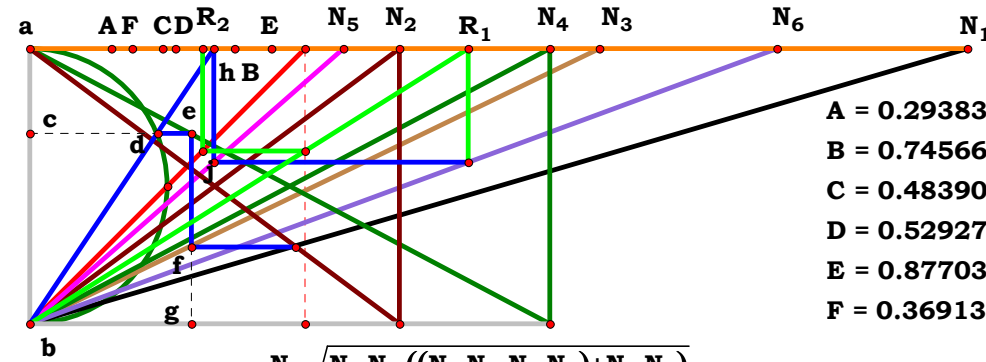
Definitions.

$$R_1 - \frac{N_6 \cdot \sqrt{N_2 \cdot N_3 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}}{N_5 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0 \quad N_6 - \frac{1}{F} = 0$$

$$R_1 - \frac{A \cdot D \cdot E}{F \cdot \sqrt{A \cdot D} \cdot \sqrt{A \cdot C - A \cdot D + B \cdot C}} = 0 \quad R_2 - \frac{F \cdot \sqrt{A \cdot D} \cdot \sqrt{A \cdot C - A \cdot D + B \cdot C}}{A \cdot D \cdot E} = 0$$



$$A = 0.29383$$

$$B = 0.74566$$

$$C = 0.48390$$

$$D = 0.52927$$

$$E = 0.87703$$

$$F = 0.36913$$

$$ab = 1.00000$$

$$N_1 = 3.40337$$

$$N_2 = 1.34110$$

$$N_3 = 2.06655$$

$$N_4 = 1.88939$$

$$N_5 = 1.14022$$

$$N_6 = 2.70906$$

$$R_1 = 1.58944$$

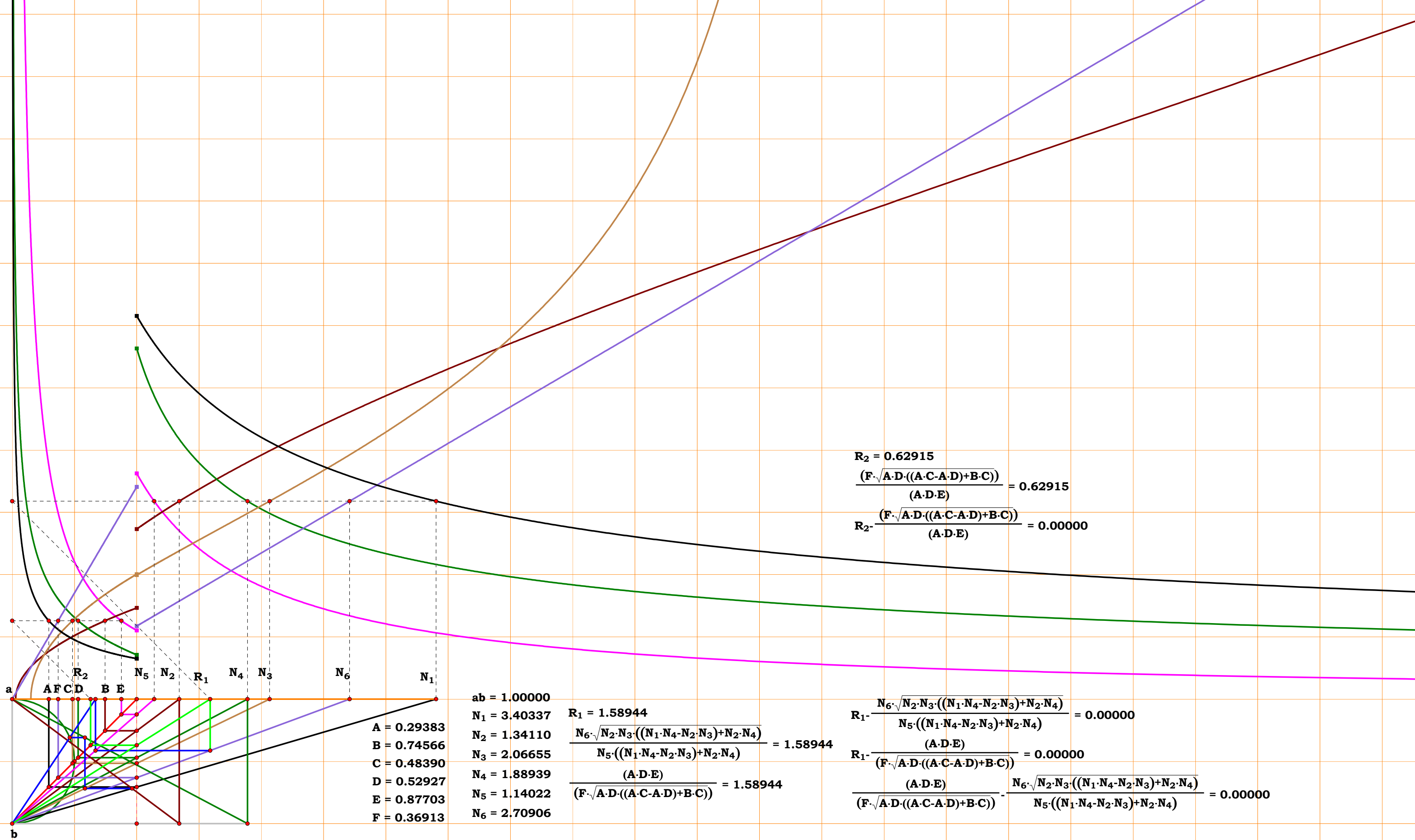
$$\frac{N_6 \cdot \sqrt{N_2 \cdot N_3 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}}{N_5 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)} = 1.58944$$

$$\frac{(A \cdot D \cdot E)}{(F \cdot \sqrt{A \cdot D} \cdot (A \cdot C - A \cdot D + B \cdot C))} = 1.58944$$

$$R_2 = 0.62915$$

$$\frac{(F \cdot \sqrt{A \cdot D} \cdot (A \cdot C - A \cdot D + B \cdot C))}{(A \cdot D \cdot E)} = 0.62915$$

$$R_2 - \frac{(F \cdot \sqrt{A \cdot D} \cdot (A \cdot C - A \cdot D + B \cdot C))}{(A \cdot D \cdot E)} = 0.00000$$



**A = 0.29383**  
**B = 0.74566**  
**C = 0.48390**  
**D = 0.52927**  
**E = 0.87703**  
**F = 0.36913**

**ab = 1.00000**  
**N<sub>1</sub> = 3.40337**  
**N<sub>2</sub> = 1.34110**  
**N<sub>3</sub> = 2.06655**  
**N<sub>4</sub> = 1.88939**  
**N<sub>5</sub> = 1.14022**  
**N<sub>6</sub> = 2.70906**

**R<sub>1</sub> = 1.58944**  

$$\frac{N_6 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{N_5 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} = 1.58944$$

$$\frac{(A \cdot D \cdot E)}{(F \cdot \sqrt{A \cdot D \cdot ((A \cdot C - A \cdot D) + B \cdot C)})} = 1.58944$$

$$R_1 - \frac{N_6 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{N_5 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} = 0.00000$$

$$R_1 - \frac{(A \cdot D \cdot E)}{(F \cdot \sqrt{A \cdot D \cdot ((A \cdot C - A \cdot D) + B \cdot C)})} = 0.00000$$

$$\frac{(A \cdot D \cdot E)}{(F \cdot \sqrt{A \cdot D \cdot ((A \cdot C - A \cdot D) + B \cdot C)})} - \frac{N_6 \cdot \sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}}{N_5 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)} = 0.00000$$

**R<sub>2</sub> = 0.62915**  

$$\frac{(F \cdot \sqrt{A \cdot D \cdot ((A \cdot C - A \cdot D) + B \cdot C)})}{(A \cdot D \cdot E)} = 0.62915$$

$$R_2 - \frac{(F \cdot \sqrt{A \cdot D \cdot ((A \cdot C - A \cdot D) + B \cdot C)})}{(A \cdot D \cdot E)} = 0.00000$$



2SMT6R6

Given.

Unit.  $ab := 1$

$N_1 := 4.18964$   $N_2 := 1.88514$

$N_3 := 1.38998$   $N_4 := 2.82580$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$

Descriptions.

$ef := \frac{N_2}{N_1 + N_2}$   $cd := N_3 \cdot ef$   $ac := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - cd^2}$

$R_1 := N_4 \cdot (1 - ac)$   $R_1 = 2.127465$   $R_2 := \frac{1}{R_1}$

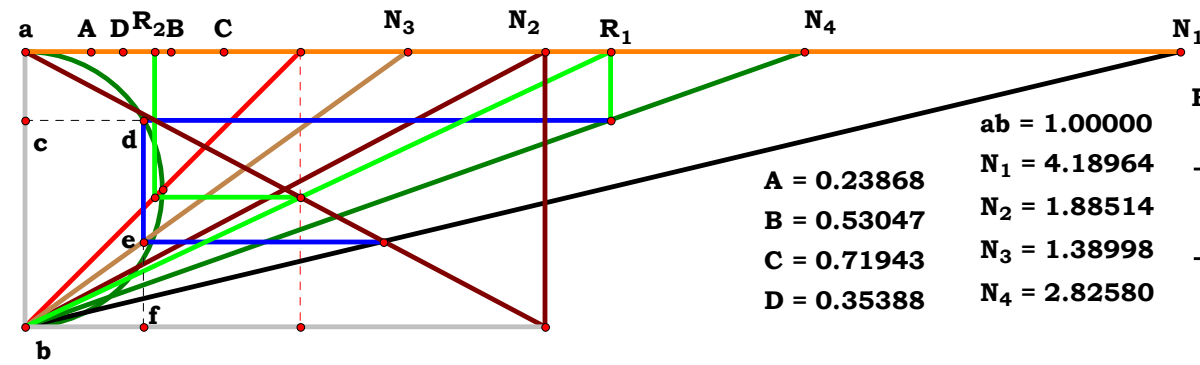
Definitions.

$$R_1 - \frac{N_4 \cdot \left( N_1^2 + N_2^2 + \sqrt{N_1^2 + 2 \cdot N_1 \cdot N_2 - 4 \cdot N_2^2 \cdot N_3^2 + N_2^2} \right)}{2 \cdot (N_1 + N_2)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{\sqrt{[C \cdot (A + B) - 2 \cdot A] \cdot [C \cdot (A + B) + 2 \cdot A]} + C \cdot (A + B)}{2 \cdot D \cdot (A + B) \cdot C} = 0$$

$$R_2 - \frac{2 \cdot D \cdot (A + B) \cdot C}{\sqrt{[C \cdot (A + B) - 2 \cdot A] \cdot [C \cdot (A + B) + 2 \cdot A]} + C \cdot (A + B)} = 0$$



$$R_1 - \frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 0.00000$$

$$R_1 - \frac{(C \cdot (A + B) + \sqrt{(C \cdot (A + B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A + B))})}{(2 \cdot C \cdot D \cdot (A + B))} = 0.00000$$

$$\frac{(C \cdot (A + B) + \sqrt{(C \cdot (A + B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A + B))})}{(2 \cdot C \cdot D \cdot (A + B))} - \frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 0.00000$$

$R_1 = 2.12746$

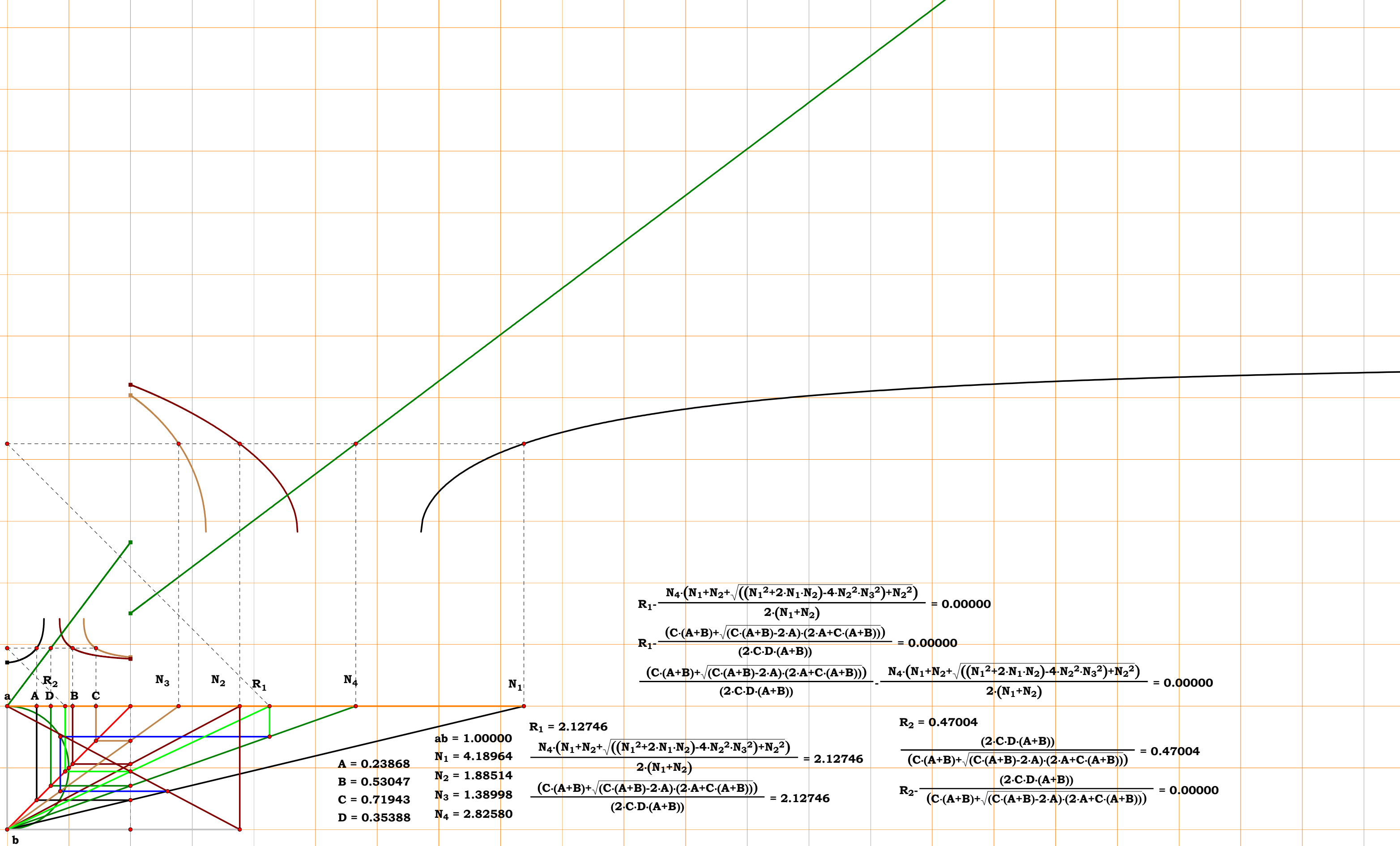
$$\frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 2.12746$$

$$\frac{(C \cdot (A + B) + \sqrt{(C \cdot (A + B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A + B))})}{(2 \cdot C \cdot D \cdot (A + B))} = 2.12746$$

$R_2 = 0.47004$

$$\frac{(2 \cdot C \cdot D \cdot (A + B))}{(C \cdot (A + B) + \sqrt{(C \cdot (A + B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A + B))})} = 0.47004$$

$$R_2 - \frac{(2 \cdot C \cdot D \cdot (A + B))}{(C \cdot (A + B) + \sqrt{(C \cdot (A + B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A + B))})} = 0.00000$$



$$R_1 - \frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 0.00000$$

$$R_1 - \frac{(C \cdot (A+B) + \sqrt{(C \cdot (A+B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A+B))})}{(2 \cdot C \cdot D \cdot (A+B))} = 0.00000$$

$$\frac{(C \cdot (A+B) + \sqrt{(C \cdot (A+B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A+B))})}{(2 \cdot C \cdot D \cdot (A+B))} - \frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 0.00000$$

$$R_1 = 2.12746$$

$$\frac{N_4 \cdot (N_1 + N_2 + \sqrt{((N_1^2 + 2 \cdot N_1 \cdot N_2) - 4 \cdot N_2^2 \cdot N_3^2) + N_2^2})}{2 \cdot (N_1 + N_2)} = 2.12746$$

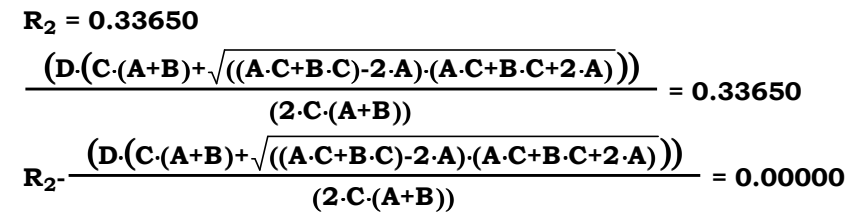
$$\frac{(C \cdot (A+B) + \sqrt{(C \cdot (A+B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A+B))})}{(2 \cdot C \cdot D \cdot (A+B))} = 2.12746$$

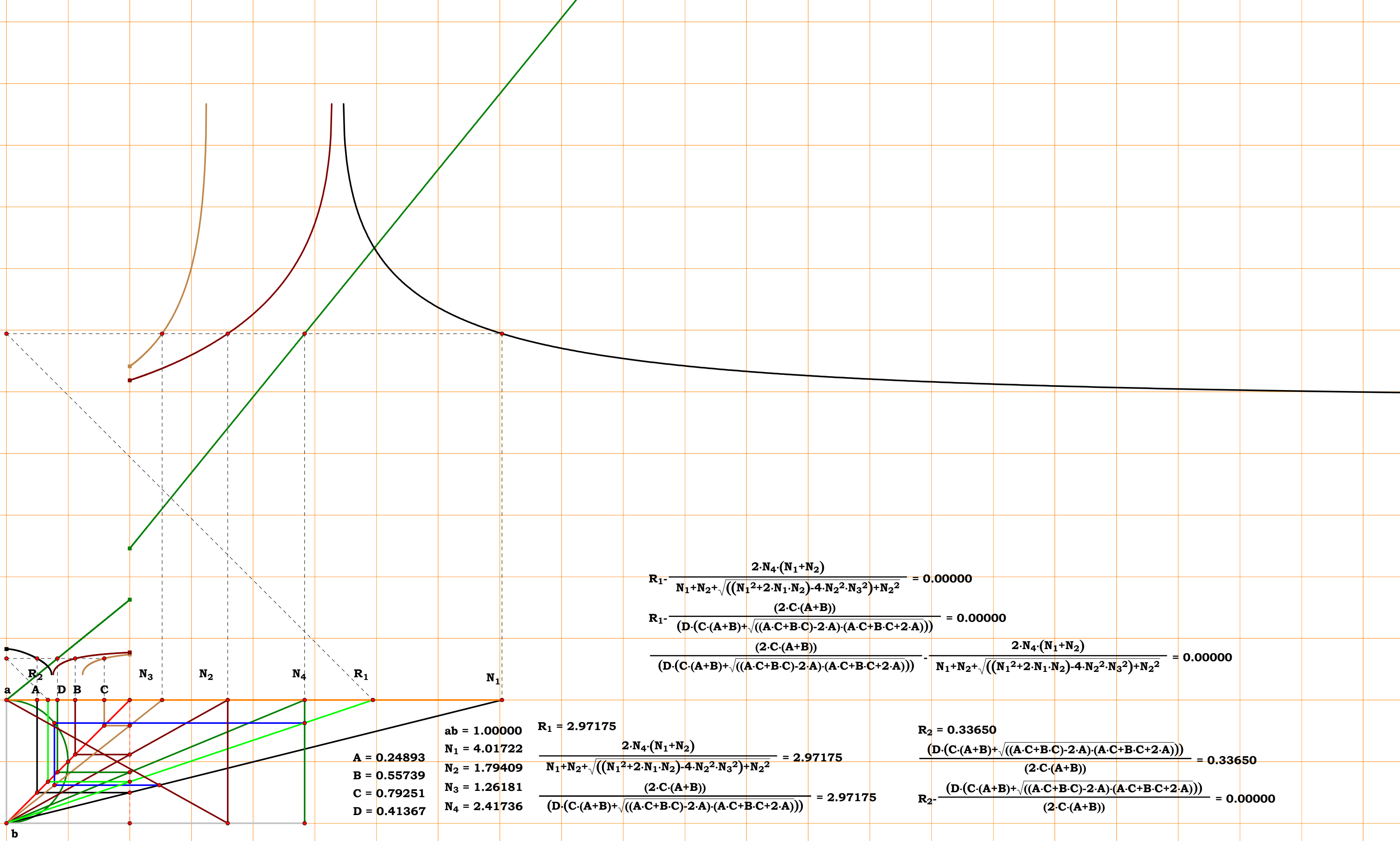
$$R_2 = 0.47004$$

$$\frac{(2 \cdot C \cdot D \cdot (A+B))}{(C \cdot (A+B) + \sqrt{(C \cdot (A+B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A+B))})} = 0.47004$$

$$R_2 - \frac{(2 \cdot C \cdot D \cdot (A+B))}{(C \cdot (A+B) + \sqrt{(C \cdot (A+B) - 2 \cdot A) \cdot (2 \cdot A + C \cdot (A+B))})} = 0.00000$$

## 2SMT6R7

$$\mathbf{R}_2 - \frac{\mathbf{D} \cdot [\mathbf{C} \cdot (\mathbf{A} + \mathbf{B}) + \sqrt{(\mathbf{A} \cdot \mathbf{C} + \mathbf{B} \cdot \mathbf{C} - 2 \cdot \mathbf{A}) \cdot (\mathbf{A} \cdot \mathbf{C} + \mathbf{B} \cdot \mathbf{C} + 2 \cdot \mathbf{A})}]}{2 \cdot (\mathbf{A} + \mathbf{B}) \cdot \mathbf{C}} = 0$$




## 2SMT6R8

**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{N}_4 := 1.84758 \quad \mathbf{N}_5 := 1.19563 \quad \mathbf{N}_6 := 2.68019$$

$$\mathbf{D} := \frac{1}{N_4} \quad \mathbf{E} := \frac{1}{N_5} \quad \mathbf{F} := \frac{1}{N_6}$$

$$\mathbf{ef} := \frac{N_2}{N_1 + N_2} \quad \mathbf{bf} := N_3 \cdot \mathbf{ef} \quad \mathbf{ac} := \frac{\mathbf{bf}}{N_4}$$

$$\mathbf{cd} := \sqrt{\mathbf{ac} \cdot (1 - \mathbf{ac})} \quad \mathbf{ag} := \frac{\mathbf{cd}}{1 - \mathbf{ac}} \quad \mathbf{gh} := 1 - \frac{\mathbf{ag}}{N_5}$$

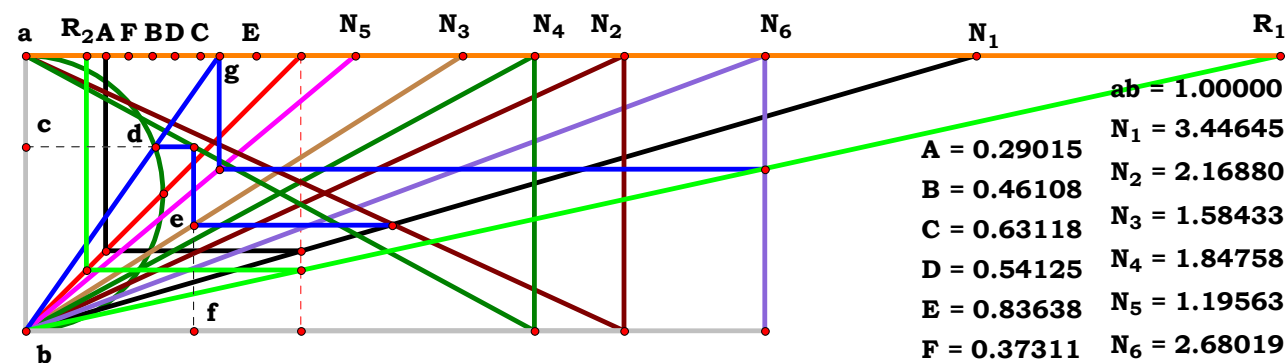
$$\mathbf{R}_1 := \frac{N_6}{1 - g_h} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 4.55369$$

$$R_1 - \frac{N_5 \cdot N_6 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}{\sqrt{N_2 \cdot N_3 \cdot (N_1 \cdot N_4 - N_2 \cdot N_3 + N_2 \cdot N_4)}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0 \quad N_6 - \frac{1}{F} = 0$$

$$R_1 - \frac{\sqrt{A \cdot D} \cdot \sqrt{A \cdot (C - D) + B \cdot C}}{A \cdot D \cdot E \cdot F} = 0 \quad R_2 - \frac{A \cdot D \cdot E \cdot F}{\sqrt{A \cdot D} \cdot \sqrt{A \cdot (C - D) + B \cdot C}} = 0$$



$$R_1 - \frac{N_5 \cdot N_6 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}} = 0.00000$$

$$R_1 - \frac{\sqrt{A \cdot D \cdot (A \cdot (C - D) + B \cdot C)}}{(A \cdot D \cdot E \cdot F)} = 0.00000$$

$$\frac{\sqrt{\mathbf{A} \cdot \mathbf{D} \cdot (\mathbf{A} \cdot (\mathbf{C} \cdot \mathbf{D}) + \mathbf{B} \cdot \mathbf{C})}}{(\mathbf{A} \cdot \mathbf{D} \cdot \mathbf{E} \cdot \mathbf{F})} - \frac{\mathbf{N}_5 \cdot \mathbf{N}_6 \cdot ((\mathbf{N}_1 \cdot \mathbf{N}_4 \cdot \mathbf{N}_2 \cdot \mathbf{N}_3) + \mathbf{N}_2 \cdot \mathbf{N}_4)}{\sqrt{\mathbf{N}_2 \cdot \mathbf{N}_3 \cdot ((\mathbf{N}_1 \cdot \mathbf{N}_4 \cdot \mathbf{N}_2 \cdot \mathbf{N}_3) + \mathbf{N}_2 \cdot \mathbf{N}_4)}} = 0.00000$$

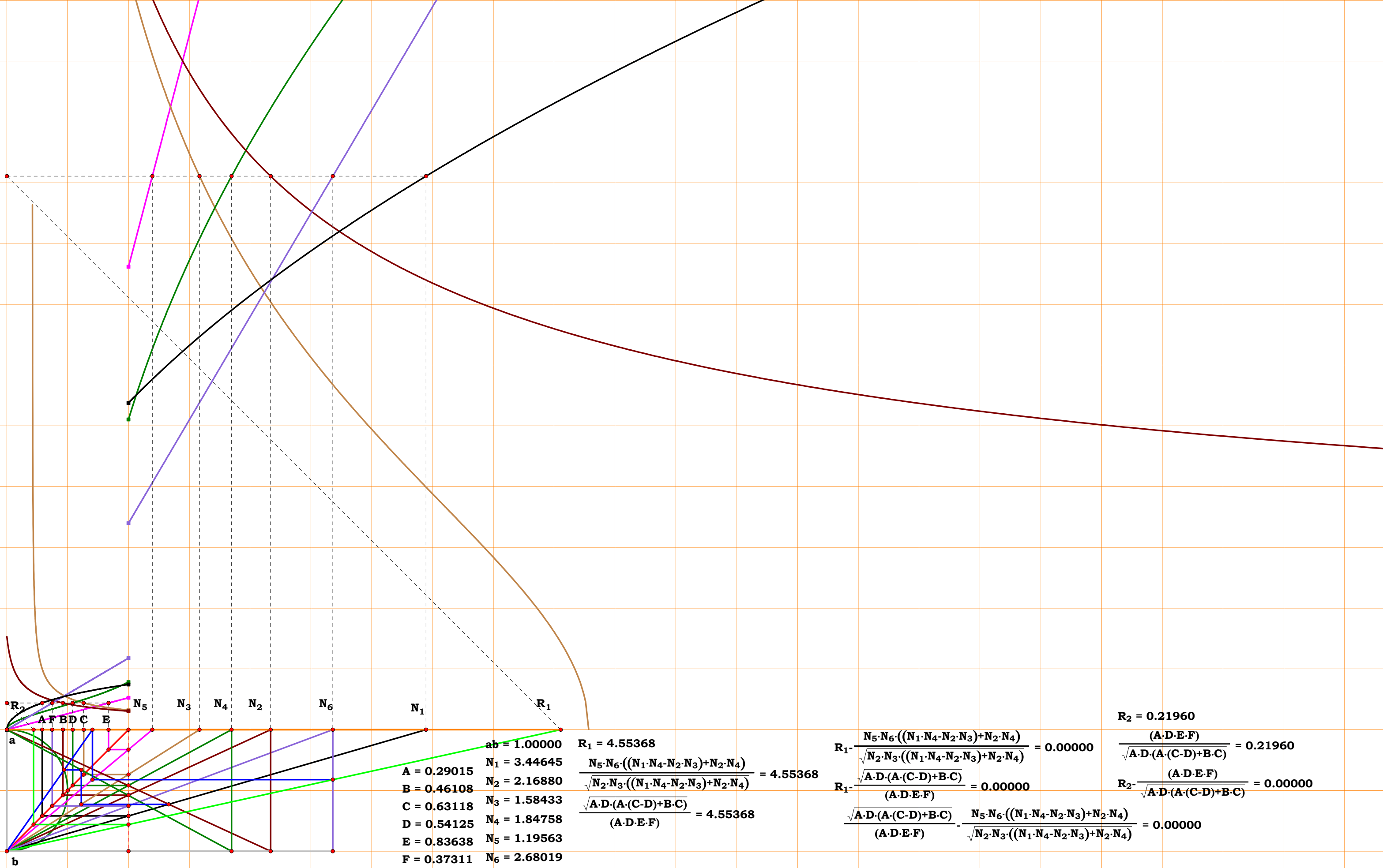
$$\frac{N_5 \cdot N_6 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}{\sqrt{N_2 \cdot N_3 \cdot ((N_1 \cdot N_4 - N_2 \cdot N_3) + N_2 \cdot N_4)}} = 4.55368$$

$$\frac{\sqrt{\mathbf{A} \cdot \mathbf{D} \cdot (\mathbf{A} \cdot (\mathbf{C} - \mathbf{D}) + \mathbf{B} \cdot \mathbf{C})}}{(\mathbf{A} \cdot \mathbf{D} \cdot \mathbf{E} \cdot \mathbf{F})} = 4.55368$$

$$\mathbf{R}_2 = 0.21960$$

$$\frac{(A \cdot D \cdot E \cdot F)}{\sqrt{A \cdot D \cdot (A \cdot (C - D) + B \cdot C)}} = 0.21960$$

$$R_2 = \frac{(A \cdot D \cdot E \cdot F)}{\sqrt{A \cdot D \cdot (A \cdot (C - D) + B \cdot C)}} = 0.00000$$





Given.

Unit.  $ab := 1$

$N_1 := 2.39374$     $N_2 := 1.47881$

$N_3 := 3.91296$     $N_4 := 2.04217$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$     $bg := \frac{1}{bN_1}$     $bh := \frac{N_1 \cdot bg}{bN_1}$

$fh := \frac{bh}{N_2}$     $ej := N_3 \cdot fh$     $bk := \frac{ej}{1 - fh}$

$bc := \frac{bk}{bk + N_4}$     $cd := \sqrt{bc \cdot (1 - bc)}$     $R_1 := \frac{cd}{bc}$

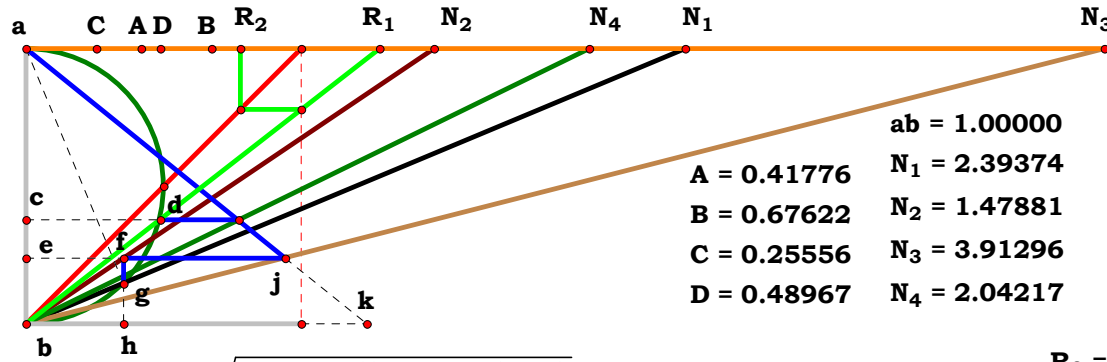
$R_2 := \frac{1}{R_1}$     $R_1 = 1.283738$

Definitions.

$$R_1 - \frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}}{N_1 \cdot N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{C \cdot \sqrt{A^2 - B \cdot A + 1}}{\sqrt{A \cdot B \cdot C \cdot D}} = 0 \quad R_2 - \frac{\sqrt{A \cdot B \cdot C \cdot D}}{C \cdot \sqrt{A^2 - B \cdot A + 1}} = 0$$



$$R_1 - \frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} = 0.00000$$

$$\frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} - \frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_3} = 0.00000$$

$ab = 1.00000$

$N_1 = 2.39374$

$A = 0.41776$

$B = 0.67622$

$C = 0.25556$

$D = 0.48967$

$N_2 = 1.47881$

$N_3 = 3.91296$

$N_4 = 2.04217$

$R_1 = 1.28374$

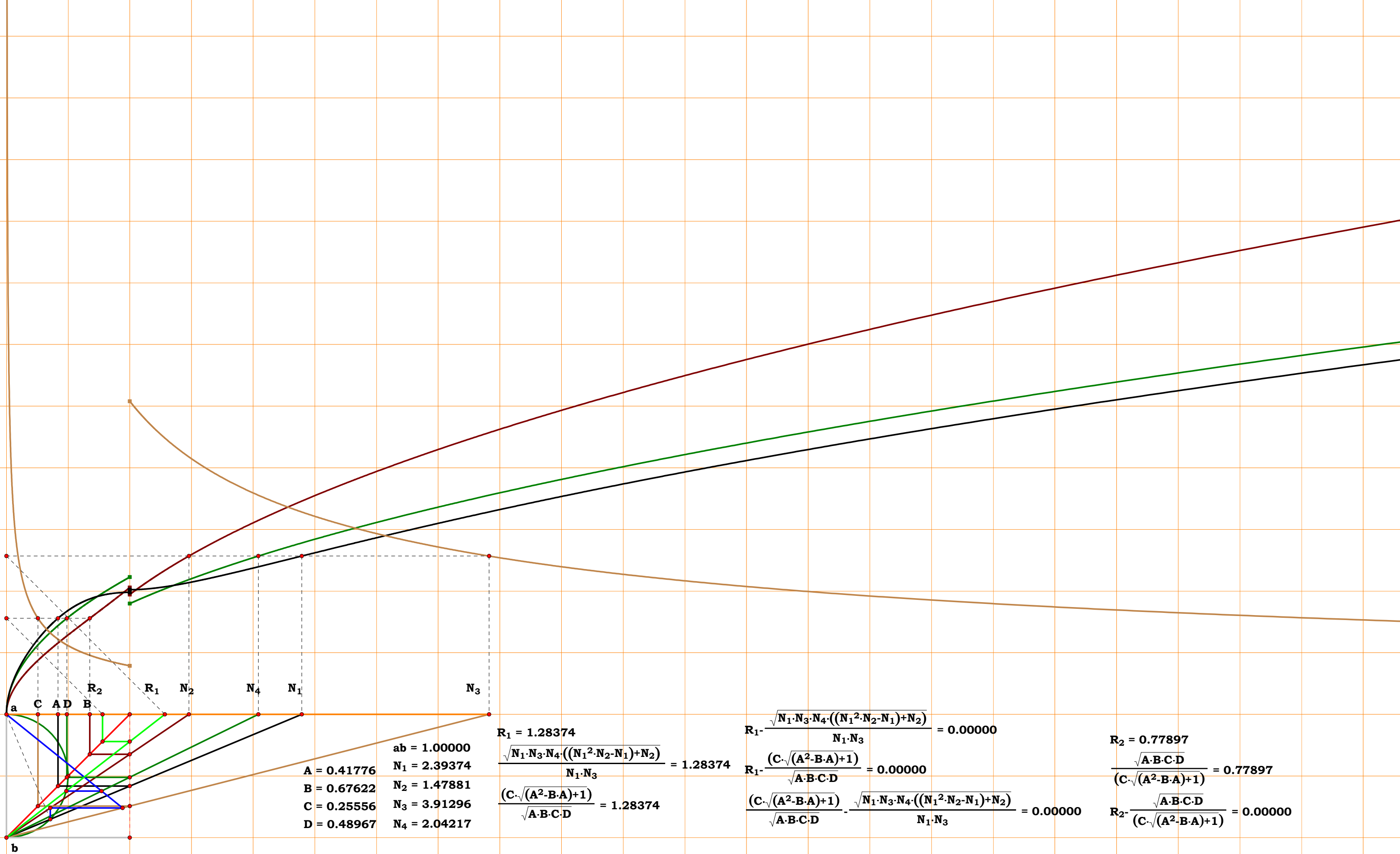
$$\frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}}{N_1 \cdot N_3} = 1.28374$$

$$\frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} = 1.28374$$

$R_2 = 0.77897$

$$\frac{\sqrt{A \cdot B \cdot C \cdot D}}{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})} = 0.77897$$

$$R_2 - \frac{\sqrt{A \cdot B \cdot C \cdot D}}{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})} = 0.00000$$



A = 0.41776  
B = 0.67622  
C = 0.25556  
D = 0.48967

ab = 1.00000  
N<sub>1</sub> = 2.39374  
N<sub>2</sub> = 1.47881  
N<sub>3</sub> = 3.91296  
N<sub>4</sub> = 2.04217

$R_1 = 1.28374$   
$$\frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 \cdot N_1) + N_2)}}{N_1 \cdot N_3} = 1.28374$$
$$\frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} = 1.28374$$

$R_1 - \frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 \cdot N_1) + N_2)}}{N_1 \cdot N_3} = 0.00000$ 
$$R_1 - \frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} = 0.00000$$
$$\frac{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})}{\sqrt{A \cdot B \cdot C \cdot D}} - \frac{\sqrt{N_1 \cdot N_3 \cdot N_4 \cdot ((N_1^2 \cdot N_2 \cdot N_1) + N_2)}}{N_1 \cdot N_3} = 0.00000$$

$R_2 = 0.77897$ 
$$\frac{\sqrt{A \cdot B \cdot C \cdot D}}{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})} = 0.77897$$
$$R_2 - \frac{\sqrt{A \cdot B \cdot C \cdot D}}{(C \cdot \sqrt{(A^2 - B \cdot A) + 1})} = 0.00000$$



Given.

$$\text{Unit. } ab := 1 \quad N_1 := 1.87168$$

$$N_2 := 1.23721 \quad N_3 := 4.06504$$

$$N_4 := 2.61182 \quad N_5 := 1.42676$$

$$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3} \quad D := \frac{1}{N_4} \quad E := \frac{1}{N_5}$$

Descriptions.

$$bN_1 := \sqrt{1 + N_1^2} \quad bd := \frac{1}{bN_1} \quad be := N_1 \cdot \frac{bd}{bN_1}$$

$$ce := \frac{be}{N_2} \quad bk := ce \cdot N_3 \quad bo := \frac{bk}{1 - ce}$$

$$bh := \frac{N_4 \cdot bo}{bo + N_4} \quad gh := 1 - \frac{bh}{N_5} \quad R_1 := \frac{bh}{gh}$$

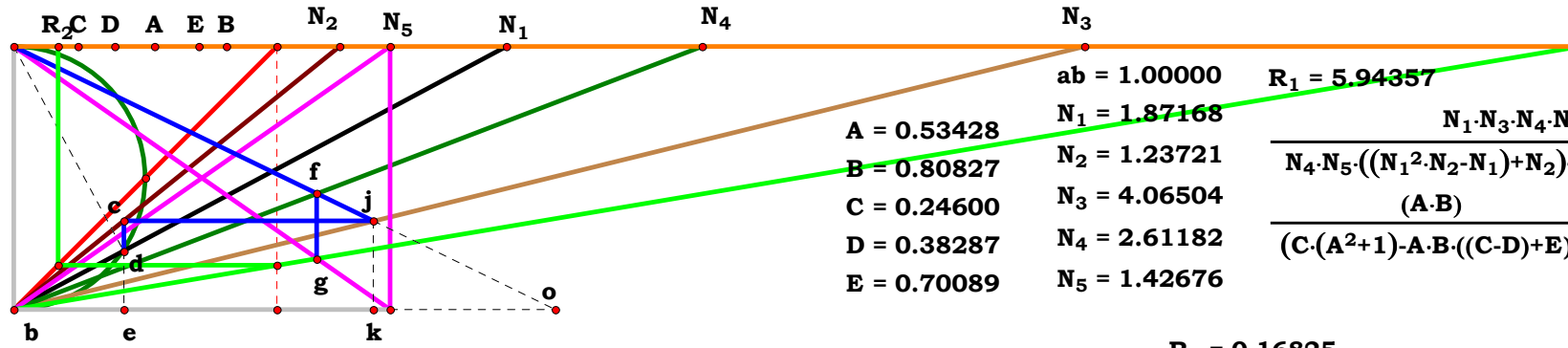
$$R_2 := \frac{1}{R_1} \quad R_1 = 5.943584$$

Definitions.

$$R_1 - \frac{N_1 \cdot N_3 \cdot N_4 \cdot N_5}{N_4 \cdot N_5 \cdot (N_1^2 \cdot N_2 - N_1 + N_2) - N_1 \cdot N_3 \cdot (N_4 - N_5)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0$$

$$R_1 - \frac{A \cdot B}{C \cdot (A^2 + 1) - A \cdot B \cdot (C - D + E)} = 0 \quad R_2 - \frac{C \cdot (A^2 + 1) - A \cdot B \cdot (C - D + E)}{A \cdot B} = 0$$



$$A = 0.53428$$

$$B = 0.80827$$

$$C = 0.24600$$

$$D = 0.38287$$

$$E = 0.70089$$

$$ab = 1.00000$$

$$N_1 = 1.87168$$

$$N_2 = 1.23721$$

$$N_3 = 4.06504$$

$$N_4 = 2.61182$$

$$N_5 = 1.42676$$

$$R_2 = 0.16825$$

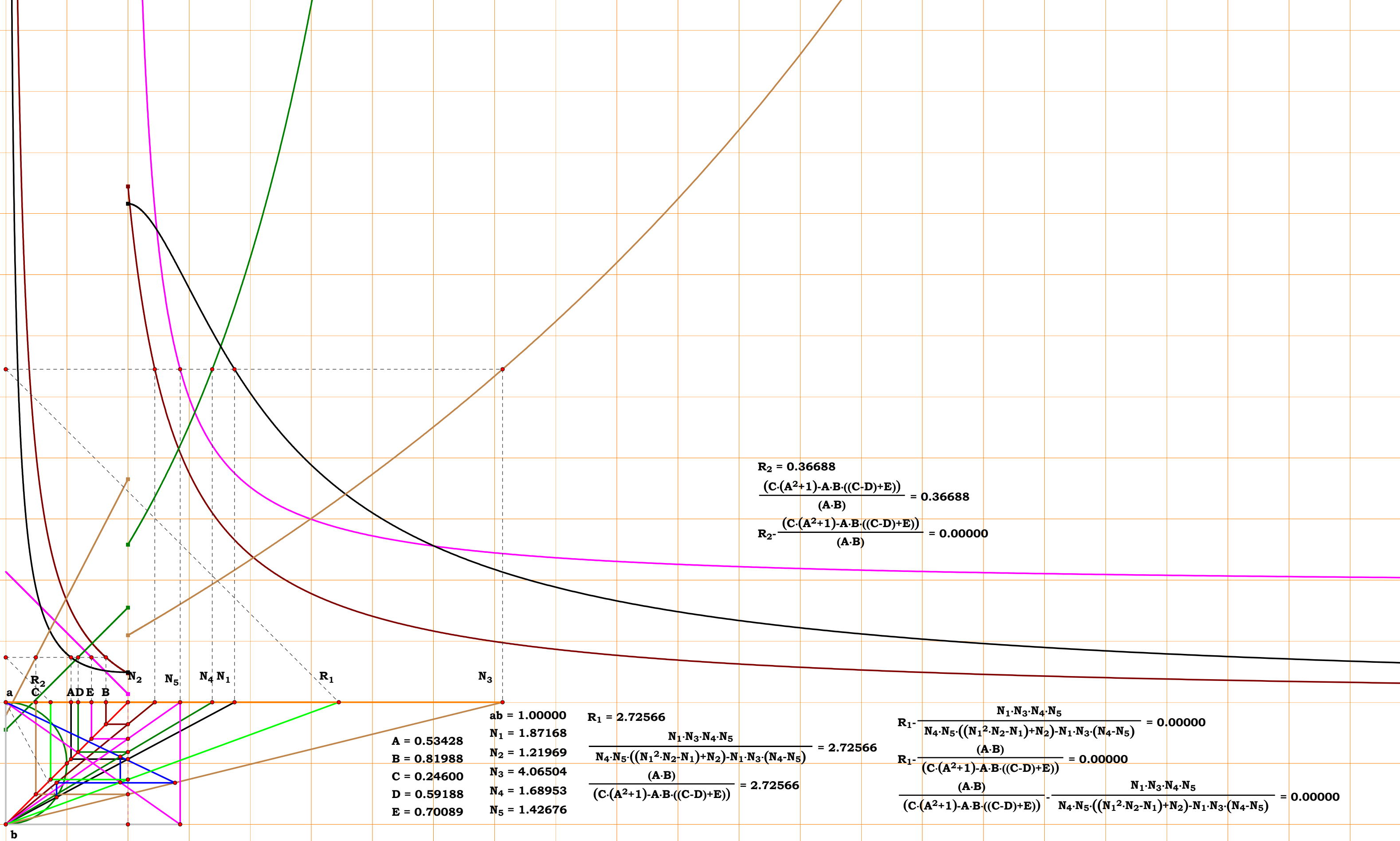
$$\frac{(C \cdot (A^2 + 1) - A \cdot B \cdot ((C - D) + E))}{(A \cdot B)} = 0.16825$$

$$R_2 - \frac{(C \cdot (A^2 + 1) - A \cdot B \cdot ((C - D) + E))}{(A \cdot B)} = 0.00000$$

$$R_1 = 5.94357$$

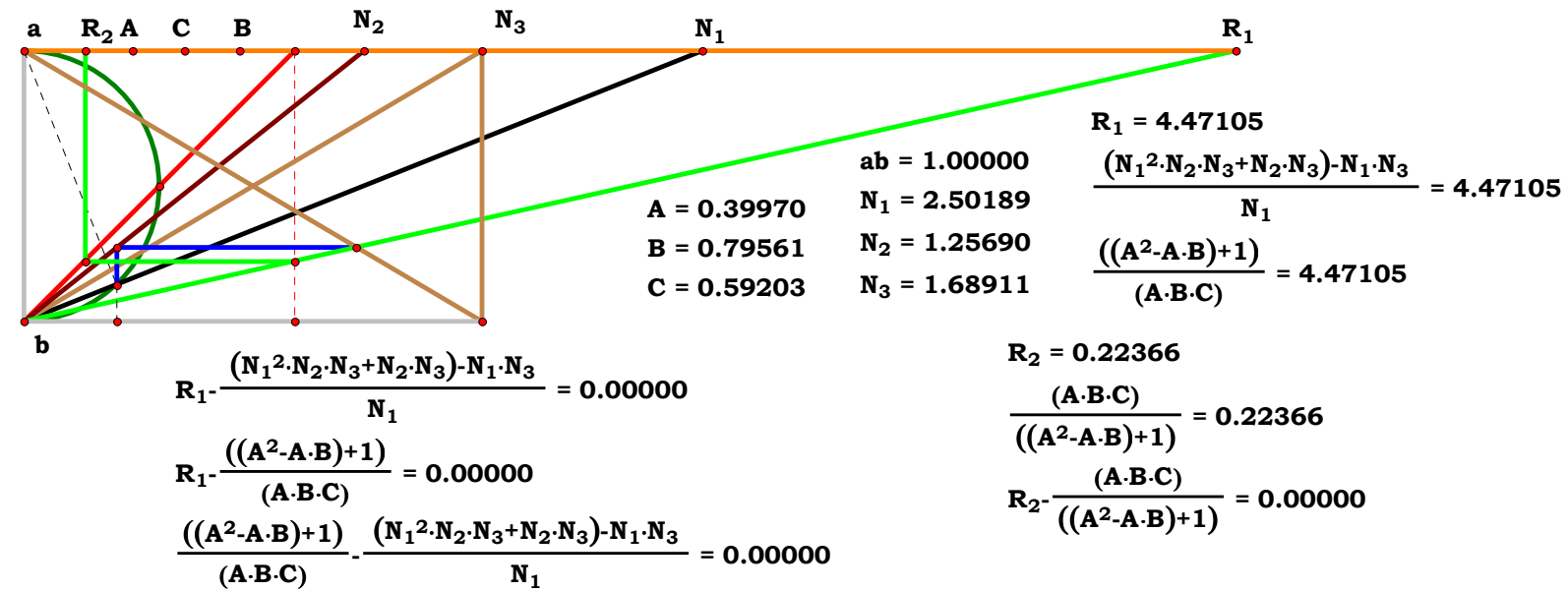
$$\frac{N_1 \cdot N_3 \cdot N_4 \cdot N_5}{N_4 \cdot N_5 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2) - N_1 \cdot N_3 \cdot (N_4 - N_5)} = 5.94357$$

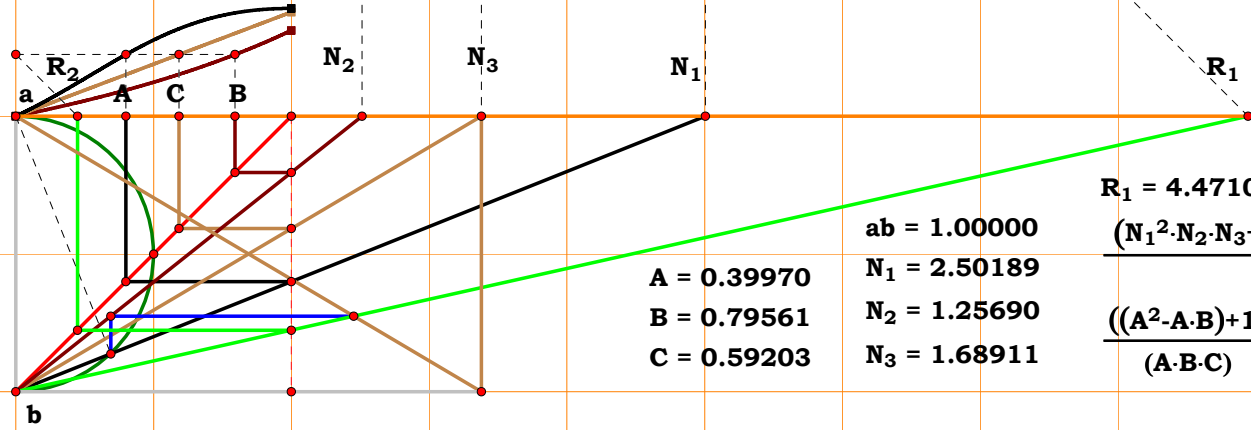
$$\frac{(A \cdot B)}{(C \cdot (A^2 + 1) - A \cdot B \cdot ((C - D) + E))} = 5.94357$$



**2SMT6R11**

**Unit.  $ab := 1$   $N_1 := 2.50189$**

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$
$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bd} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{be} := \frac{\mathbf{N}_1 \cdot \mathbf{bd}}{\mathbf{bN}_1}$$
$$\mathbf{ce} := \frac{\mathbf{be}}{N_2} \quad \mathbf{gh} := N_3 \cdot \mathbf{ce} \quad \mathbf{bg} := N_3 - \mathbf{gh}$$
$$\mathbf{R}_1 := \frac{\mathbf{bg}}{\mathbf{ce}} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 4.471084$$
$$R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3 - N_1 \cdot N_3}{N_1} = 0$$
$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$
$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 - \mathbf{B} \cdot \mathbf{A} + 1)}{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C}}{(\mathbf{A}^2 - \mathbf{B} \cdot \mathbf{A} + 1)} = 0$$




**ab = 1.00000**  
**N<sub>1</sub> = 2.50189**  
**N<sub>2</sub> = 1.25690**  
**N<sub>3</sub> = 1.68911**

$$\mathbf{R}_1 = 4.47105$$

$$\frac{(\mathbf{N}_1^2 \cdot \mathbf{N}_2 \cdot \mathbf{N}_3 + \mathbf{N}_2 \cdot \mathbf{N}_3) \cdot \mathbf{N}_1 \cdot \mathbf{N}_3}{\mathbf{N}_1} = 4.47105$$

$$\frac{((\mathbf{A}^2 \cdot \mathbf{A} \cdot \mathbf{B}) + 1)}{(\mathbf{A} \cdot \mathbf{B} \cdot \mathbf{C})} = 4.47105$$

$$\begin{aligned} R_1 - \frac{(N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3) - N_1 \cdot N_3}{N_1} &= 0.00000 \\ R_1 - \frac{((A^2 - A \cdot B) + 1)}{(A \cdot B \cdot C)} &= 0.00000 \\ \frac{((A^2 - A \cdot B) + 1)}{(A \cdot B \cdot C)} - \frac{(N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3) - N_1 \cdot N_3}{N_1} &= 0.00000 \end{aligned}$$

$$R_2 = 0.22366$$
$$\frac{(A \cdot B \cdot C)}{((A^2 - A \cdot B) + 1)} = 0.22366$$
$$R_2 - \frac{(A \cdot B \cdot C)}{((A^2 - A \cdot B) + 1)} = 0.00000$$

**2SMT6R12**

$$\mathbf{A} := \frac{\mathbf{1}}{\mathbf{N}_1} \quad \mathbf{B} := \frac{\mathbf{1}}{\mathbf{N}_2}$$
$$\mathbf{bg} := \frac{\mathbf{N}_1 \cdot \mathbf{N}_2}{\mathbf{N}_1 + \mathbf{N}_2} \quad \mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bc} := \frac{1}{\mathbf{bN}_1}$$

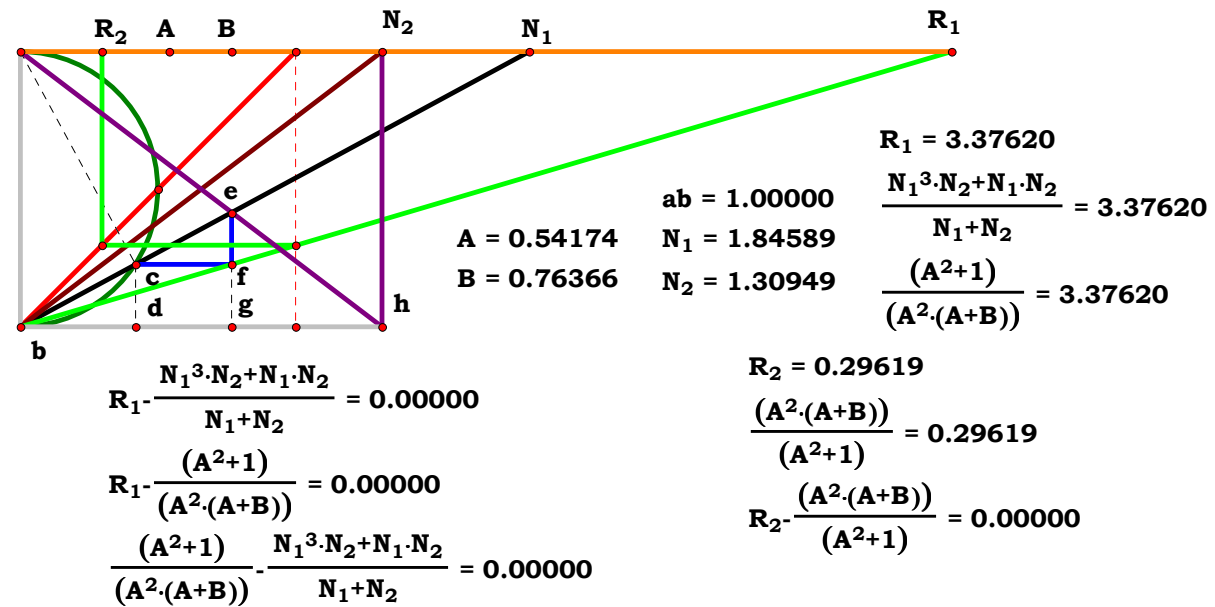
$$\mathbf{cd} := \frac{\mathbf{bc}}{\mathbf{bN}_1} \quad \mathbf{R}_1 := \frac{\mathbf{bg}}{\mathbf{cd}} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1}$$

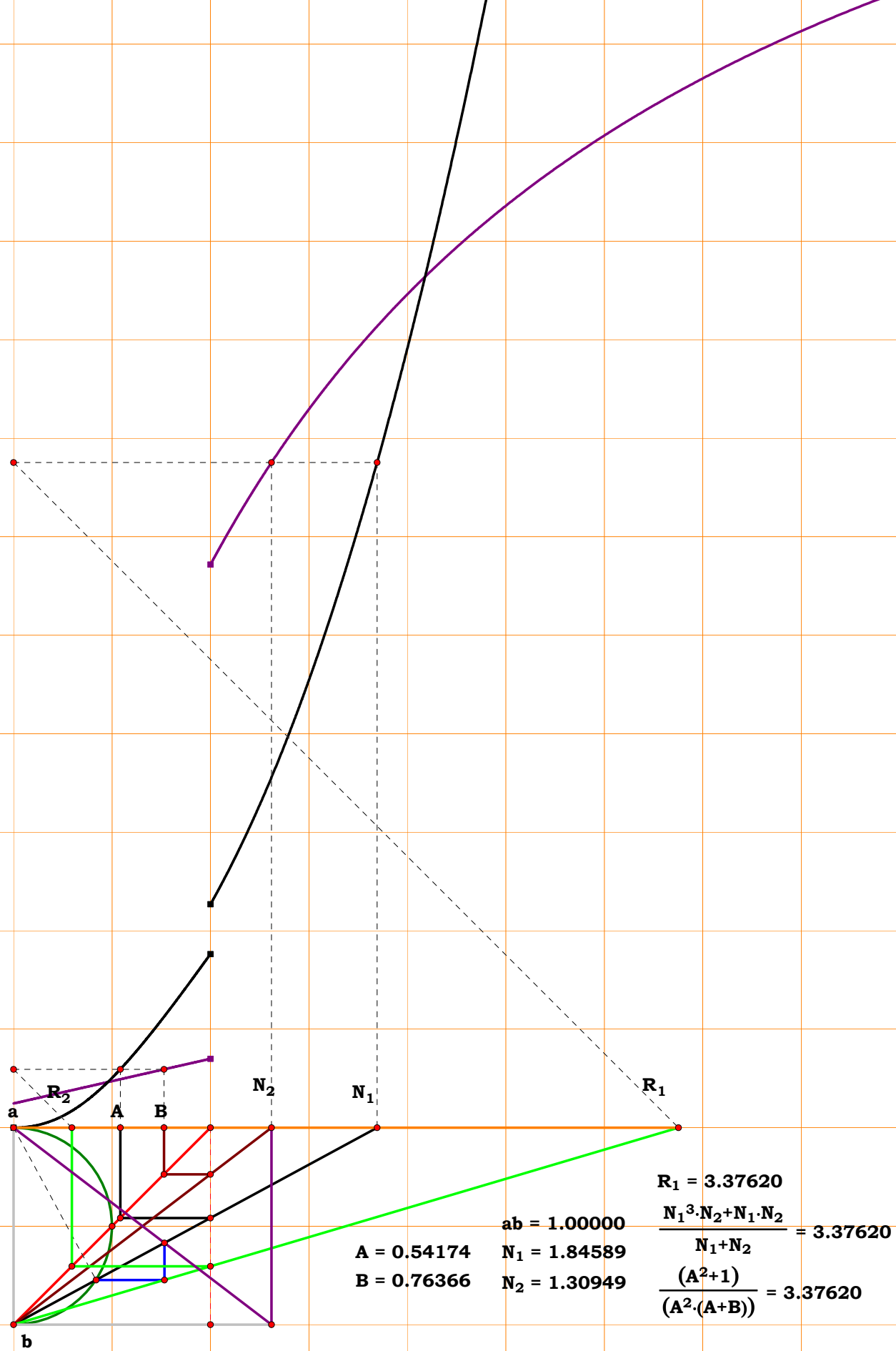
$$R_1 = 3.376214$$

$$R_1 - \frac{N_1^3 \cdot N_2 + N_1 \cdot N_2}{N_1 + N_2} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 + 1)}{\mathbf{A}^2 \cdot (\mathbf{A} + \mathbf{B})} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A}^2 \cdot (\mathbf{A} + \mathbf{B})}{(\mathbf{A}^2 + 1)} = 0$$





$$R_1 - \frac{N_1^3 \cdot N_2 + N_1 \cdot N_2}{N_1 + N_2} = 0.00000$$

$$R_1 - \frac{(A^2+1)}{(A^2 \cdot (A+B))} = 0.00000$$

$$\frac{(A^2+1)}{(A^2 \cdot (A+B))} - \frac{N_1^3 \cdot N_2 + N_1 \cdot N_2}{N_1 + N_2} = 0.00000$$

$$R_2 = 0.29619$$

$$\frac{(A^2 \cdot (A+B))}{(A^2+1)} = 0.29619$$

$$R_2 - \frac{(A^2 \cdot (A+B))}{(A^2+1)} = 0.00000$$



2SMT6R13

Given.

Unit.  $ab := 1$      $N_1 := 1.97294$

$N_2 := 1.51516$      $N_3 := 1.25037$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$      $bd := \frac{1}{bN_1}$      $be := \frac{N_1 \cdot bd}{bN_1}$      $de := \frac{be}{N_1}$

$ce := \frac{be}{N_2}$      $hj := N_3 \cdot ce$      $bh := N_3 - hj$

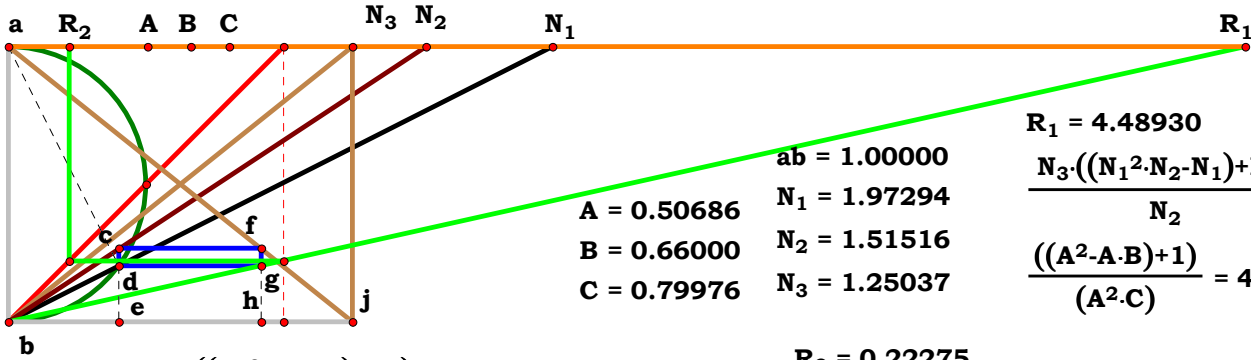
$R_1 := \frac{bh}{de}$      $R_2 := \frac{1}{R_1}$      $R_1 = 4.489277$

Definitions.

$R_1 - \frac{N_3 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}{N_2} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{(A^2 - B \cdot A + 1)}{A^2 \cdot C} = 0$      $R_2 - \frac{A^2 \cdot C}{(A^2 - B \cdot A + 1)} = 0$



$A = 0.50686$   
 $B = 0.66000$   
 $C = 0.79976$

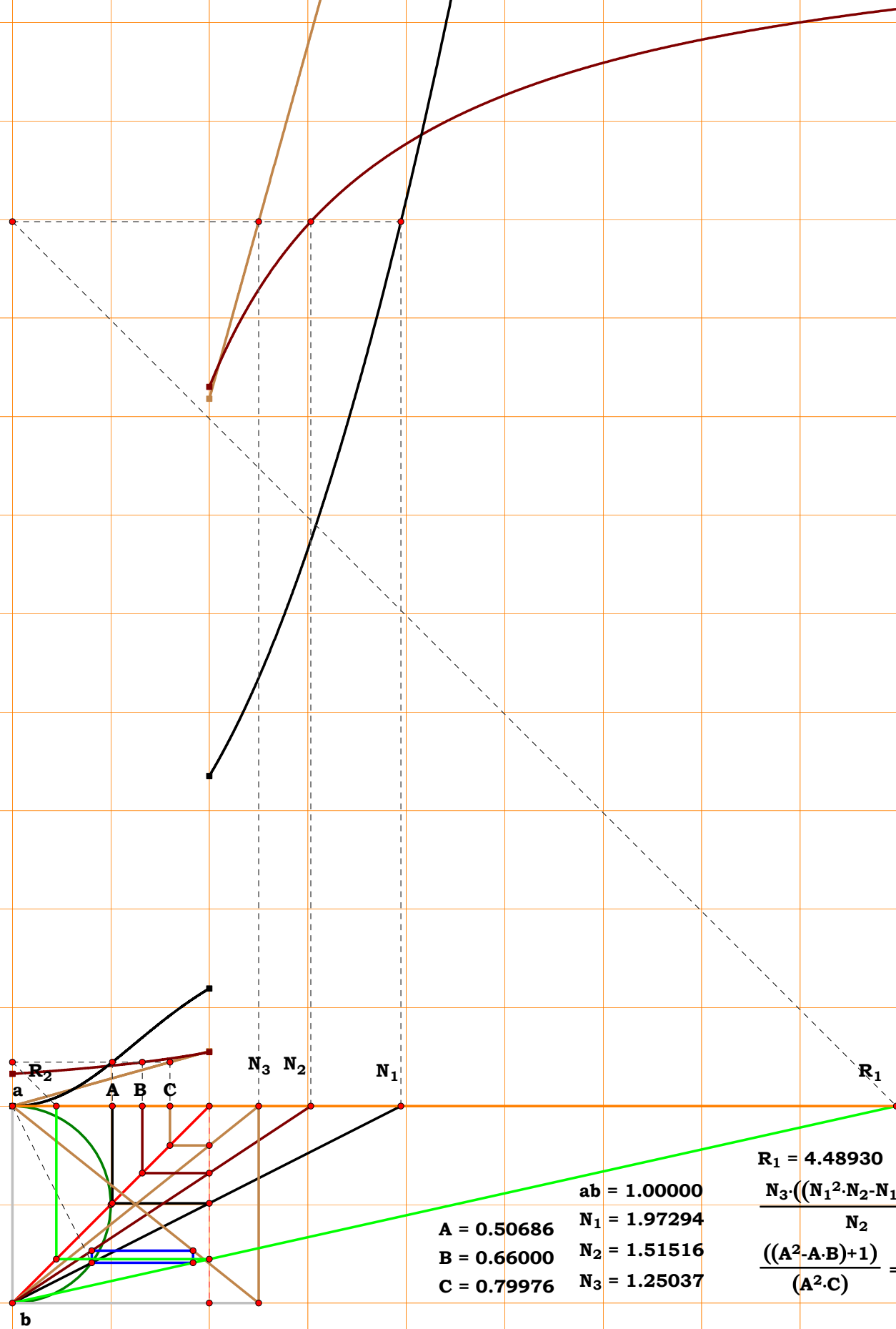
$ab = 1.00000$   
 $N_1 = 1.97294$   
 $N_2 = 1.51516$   
 $N_3 = 1.25037$

$R_1 = 4.48930$   
 $\frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 4.48930$   
 $\frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} = 4.48930$

$R_2 = 0.22275$   
 $\frac{(A^2 \cdot C)}{((A^2 - A \cdot B) + 1)} = 0.22275$

$R_2 - \frac{(A^2 \cdot C)}{((A^2 - A \cdot B) + 1)} = 0.00000$

$R_1 - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 0.00000$   
 $R_1 - \frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} = 0.00000$   
 $\frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 0.00000$



	<b>ab = 1.00000</b>
<b>A = 0.50686</b>	<b>N<sub>1</sub> = 1.97294</b>
<b>B = 0.66000</b>	<b>N<sub>2</sub> = 1.51516</b>
<b>C = 0.79976</b>	<b>N<sub>3</sub> = 1.25037</b>

$$\begin{aligned} R_1 &= 4.48930 \\ \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} &= 4.48930 \\ \frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} &= 4.48930 \end{aligned}$$

$$\begin{aligned} R_1 - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} &= 0.00000 \\ R_1 - \frac{((A^2 \cdot A \cdot B) + 1)}{(A^2 \cdot C)} &= 0.00000 \\ \frac{((A^2 \cdot A \cdot B) + 1)}{(A^2 \cdot C)} - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} &= 0.00000 \end{aligned}$$

$$\frac{R_2 \cdot (A^2 \cdot C)}{((A^2 \cdot A \cdot B) + 1)} = 0.22275$$

$$R_2 - \frac{(A^2 \cdot C)}{((A^2 \cdot A \cdot B) + 1)} = 0.00000$$

## 2SMT6R14

**Unit.**     $\mathbf{a} := 1$        $\mathbf{N}_1 := 2.48997$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{N}_1^2 + 1} \quad \mathbf{bc} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{CD} := \frac{\mathbf{bc}}{\mathbf{bN}_1}$$

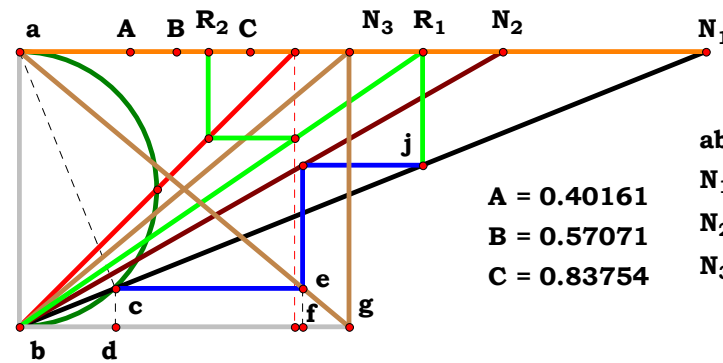
$$\mathbf{fg} := \mathbf{N}_3 \cdot \mathbf{CD} \qquad \mathbf{bf} := \mathbf{N}_3 - \mathbf{fg} \qquad \mathbf{hf} := \frac{\mathbf{bf}}{\mathbf{N}_2}$$

$$\mathbf{R}_1 := \mathbf{N}_1 \cdot \mathbf{h}\mathbf{f} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 1.461025$$

$$R_1 - \frac{N_1^3 \cdot N_3}{N_1^2 \cdot N_2 + N_2} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$\mathbf{R}_1 - \frac{\mathbf{B}}{\mathbf{A} \cdot \mathbf{C} \cdot (\mathbf{A}^2 + 1)} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A} \cdot \mathbf{C} \cdot (\mathbf{A}^2 + 1)}{\mathbf{B}} = 0$$



$$N_3 = 1.19397$$

$$R_1 - \frac{N_1^3 \cdot N_3}{N_1^2 \cdot N_2 + N_2} = 0.00000$$

$$R_1 - \frac{B}{(A \cdot C \cdot (A^2 + 1))} = 0.00000$$

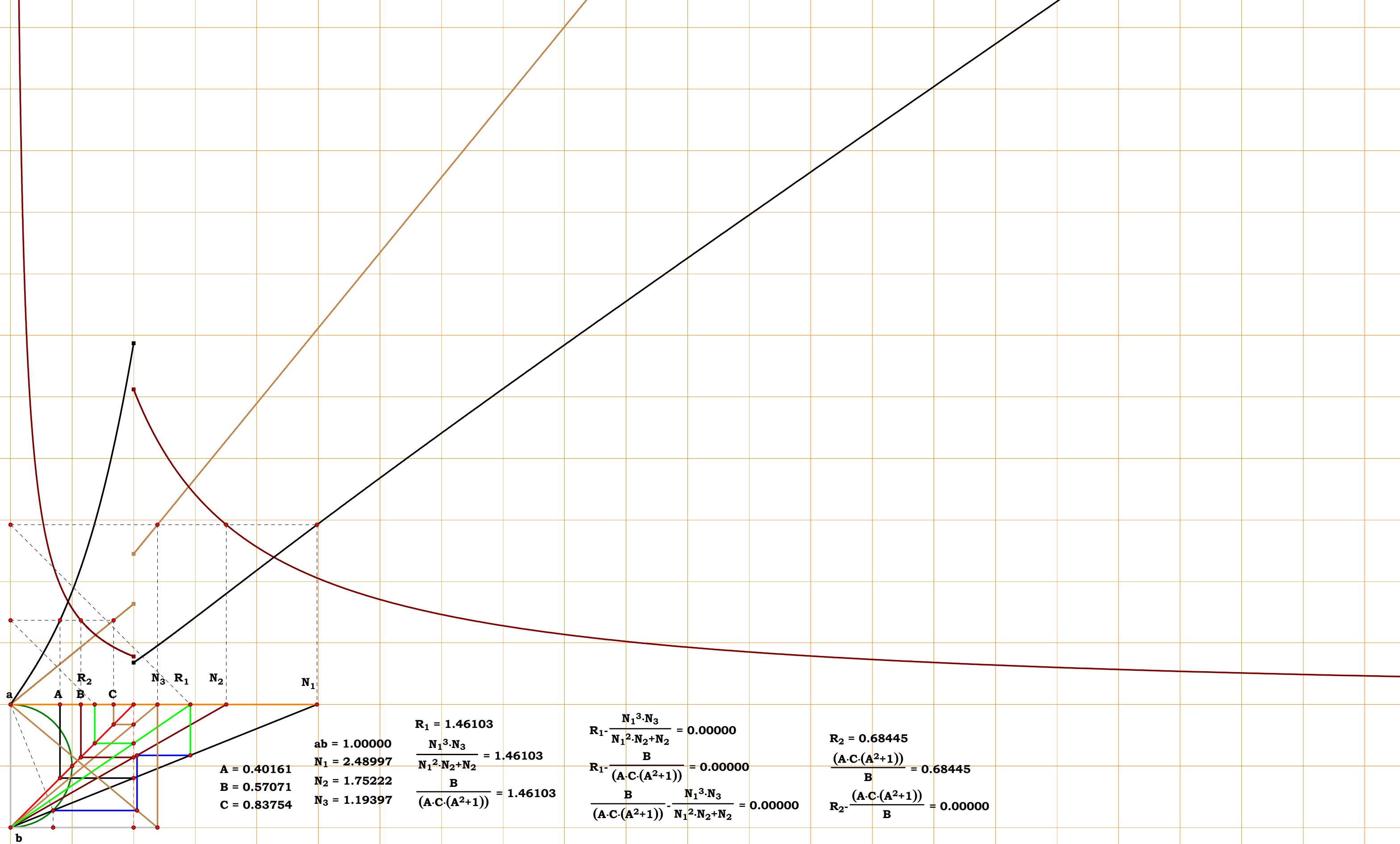
$$\frac{B}{(A \cdot C \cdot (A^2 + 1))} - \frac{N_1^3 \cdot N_3}{N_1^2 \cdot N_2 + N_2} = 0.00000$$

$$\frac{N_1^3 \cdot N_3}{N_1^2 \cdot N_2 + N_2} = 1.46103$$

$$\frac{B}{(A \cdot C \cdot (A^2 + 1))} = 1.46103$$

$$\frac{(A \cdot C \cdot (A^2 + 1))}{B} = 0.68445$$

$$R_2 - \frac{(A \cdot C \cdot (A^2 + 1))}{B} = 0.00000$$





2SMT6R15

Given.

Unit.  $ab := 1$

$N_1 := 2.50574$     $N_2 := 2.04868$

$N_3 := 1.23412$     $N_4 := 1.60703$

$A := \frac{1}{N_1}$     $B := \frac{1}{N_2}$     $C := \frac{1}{N_3}$     $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$     $bc := \frac{1}{bN_1}$     $ef := 1 \cdot \frac{bc}{bN_1}$

$bf := N_3 \cdot (1 - ef)$     $df := \frac{bf}{N_2}$

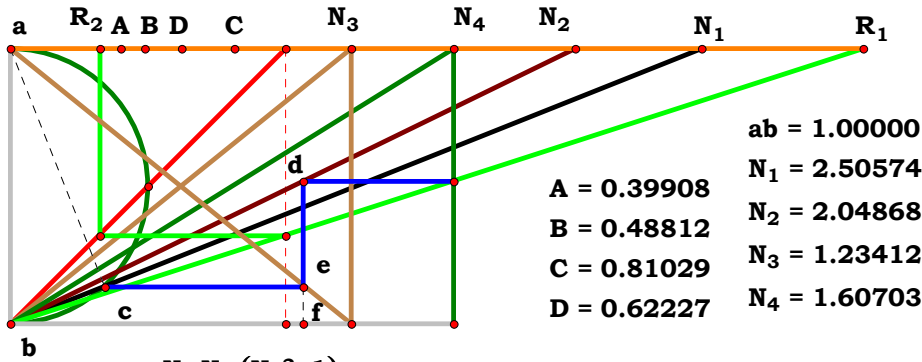
$R_1 := \frac{N_4}{df}$     $R_2 := \frac{1}{R_1}$     $R_1 = 3.092605$

Definitions.

$$R_1 - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{C \cdot (A^2 + 1)}{B \cdot D} = 0 \quad R_2 - \frac{B \cdot D}{C \cdot (A^2 + 1)} = 0$$



$ab = 1.00000$   
 $N_1 = 2.50574$   
 $N_2 = 2.04868$   
 $N_3 = 1.23412$   
 $N_4 = 1.60703$   
 $A = 0.39908$   
 $B = 0.48812$   
 $C = 0.81029$   
 $D = 0.62227$

$$R_1 - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(C \cdot (A^2 + 1))}{(B \cdot D)} = 0.00000$$

$$\frac{(C \cdot (A^2 + 1))}{(B \cdot D)} - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 0.00000$$

$R_2 = 0.32335$

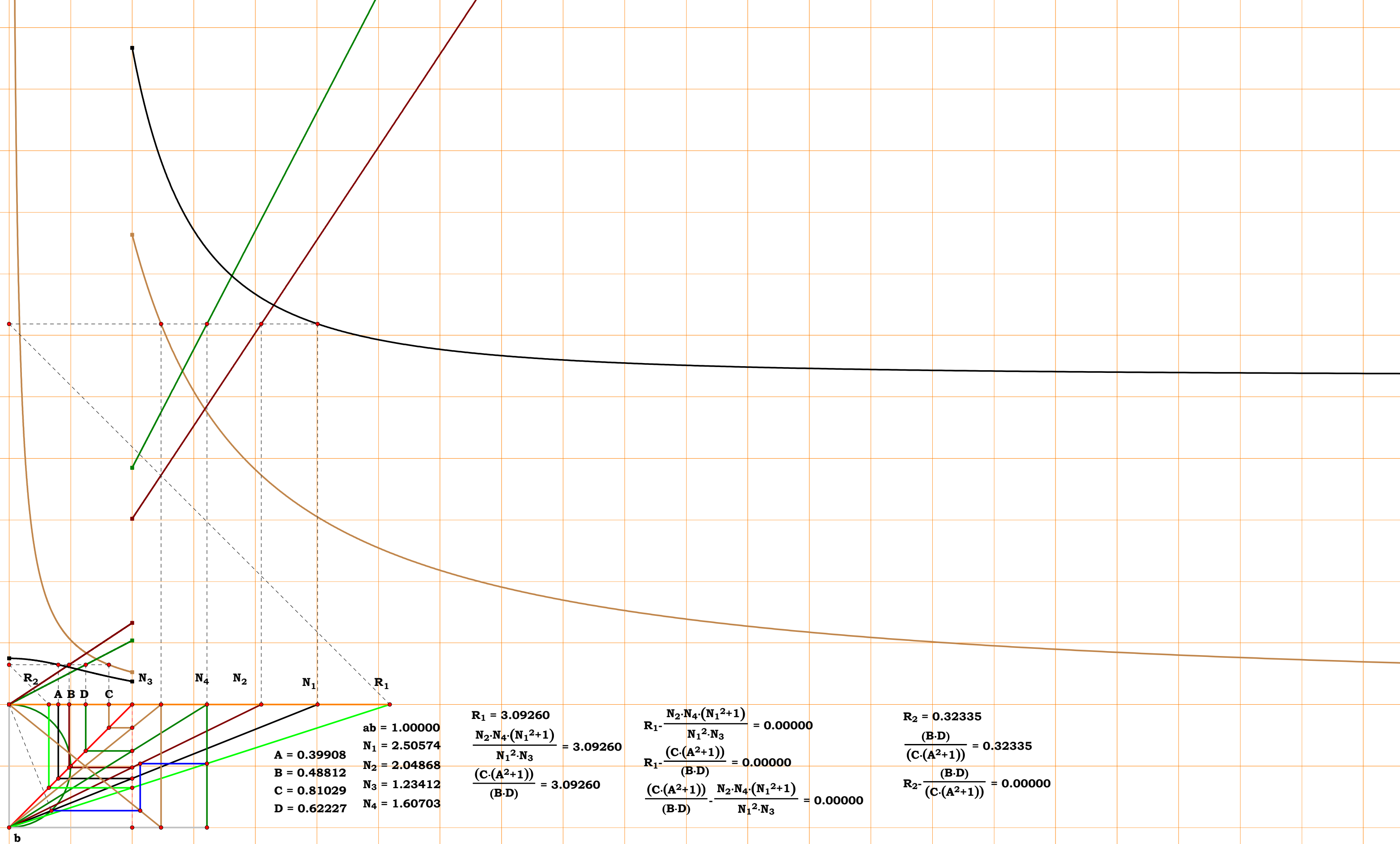
$$\frac{(B \cdot D)}{(C \cdot (A^2 + 1))} = 0.32335$$

$$R_2 - \frac{(B \cdot D)}{(C \cdot (A^2 + 1))} = 0.00000$$

$R_1 = 3.09260$

$$\frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 3.09260$$

$$\frac{(C \cdot (A^2 + 1))}{(B \cdot D)} = 3.09260$$



$ab = 1.00000$   
 $N_1 = 2.50574$   
 $N_2 = 2.04868$   
 $N_3 = 1.23412$   
 $N_4 = 1.60703$   
 $A = 0.39908$   
 $B = 0.48812$   
 $C = 0.81029$   
 $D = 0.62227$

$$R_1 = 3.09260$$

$$\frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 3.09260$$

$$\frac{(C \cdot (A^2 + 1))}{(B \cdot D)} = 3.09260$$

$$R_1 - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 0.00000$$

$$R_1 - \frac{(C \cdot (A^2 + 1))}{(B \cdot D)} = 0.00000$$

$$\frac{(C \cdot (A^2 + 1))}{(B \cdot D)} - \frac{N_2 \cdot N_4 \cdot (N_1^2 + 1)}{N_1^2 \cdot N_3} = 0.00000$$

$$R_2 = 0.32335$$

$$\frac{(B \cdot D)}{(C \cdot (A^2 + 1))} = 0.32335$$

$$R_2 - \frac{(B \cdot D)}{(C \cdot (A^2 + 1))} = 0.00000$$

**2SMT7R0**

**Unit.**  $\mathbf{ab} := 1$

$$\mathbf{N}_1 := 2.89432 \quad \mathbf{N}_2 := 2.01580$$

$$N_3 := 4.96307 \quad N_4 := 1.42268$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3} \quad \mathbf{D} := \frac{1}{N_4}$$

$$\mathbf{h_j} := \frac{\mathbf{N_2}}{\mathbf{N_1}} \quad \mathbf{gm} := \mathbf{N_4} \cdot \mathbf{h_j}$$

$$\mathbf{bg} := \mathbf{N}_4 - \mathbf{gm} \quad \mathbf{ak} := \frac{\mathbf{bg}}{\mathbf{hj}}$$

$$\mathbf{bk} := \sqrt{\mathbf{ak}^2 + 1} \quad \mathbf{be} := \frac{1}{\mathbf{bk}}$$

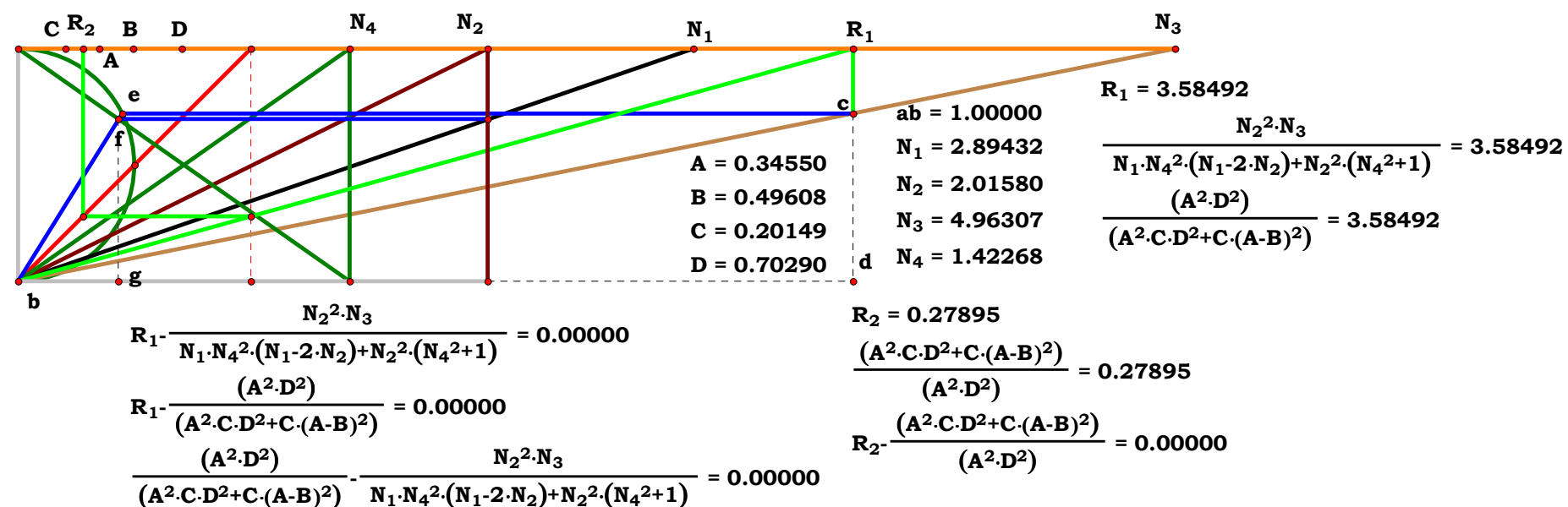
$$\mathbf{cd} := \frac{\mathbf{be}}{\mathbf{bk}} \quad \mathbf{R}_1 := \mathbf{N}_3 \cdot \mathbf{cd}$$

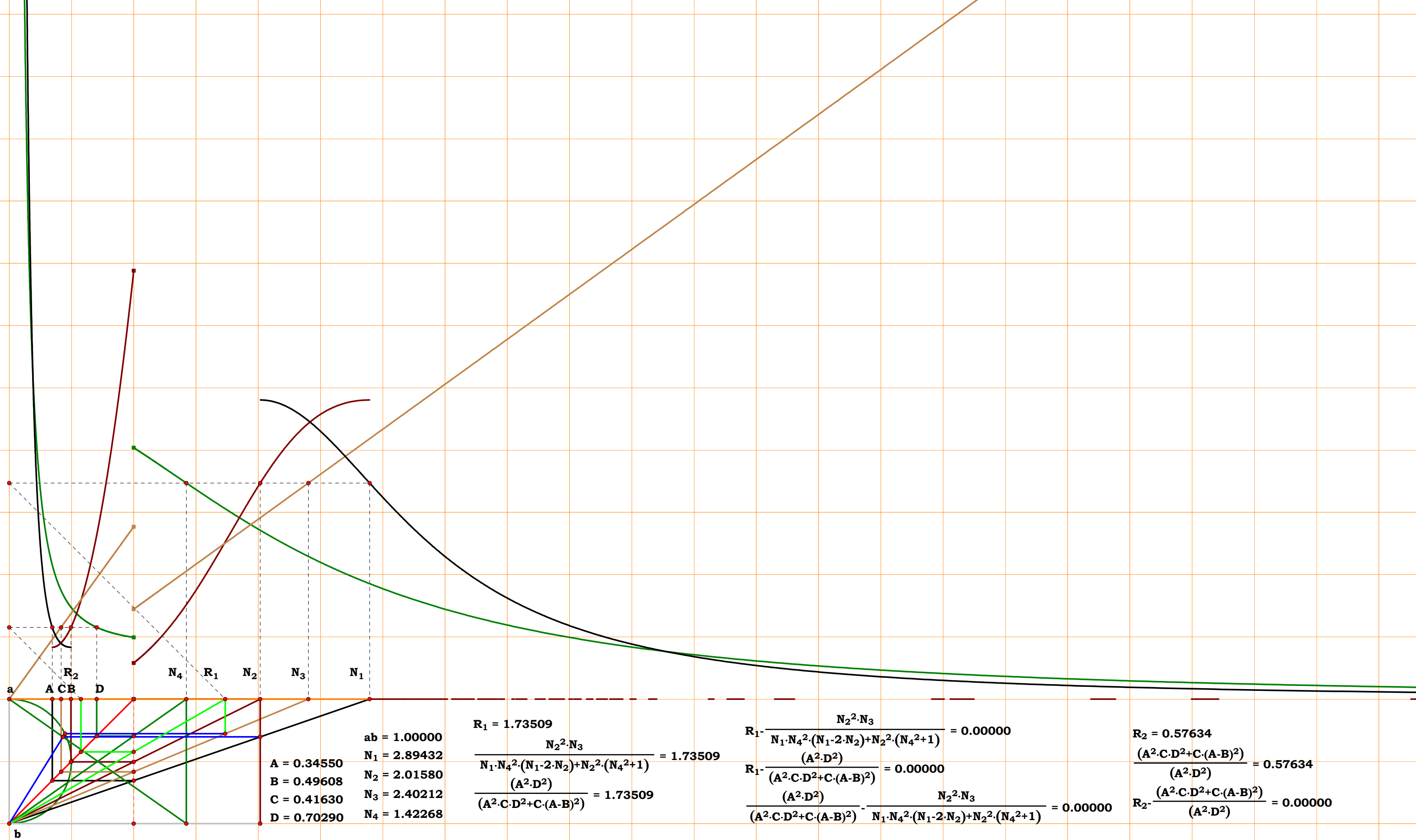
$$\mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 3.584907$$

$$R_1 - \frac{N_2^2 \cdot N_3}{N_1 \cdot N_4^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_4^2 + 1)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{A^2 \cdot D^2}{A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2} = 0 \quad R_2 - \frac{A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2}{A^2 \cdot D^2} = 0$$





$ab = 1.00000$   
 $N_1 = 2.89432$   
 $N_2 = 2.01580$   
 $N_3 = 2.40212$   
 $N_4 = 1.42268$   
 $A = 0.34550$   
 $B = 0.49608$   
 $C = 0.41630$   
 $D = 0.70290$

$$R_1 = 1.73509$$

$$\frac{N_2^2 \cdot N_3}{N_1 \cdot N_4^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_4^2 + 1)} = 1.73509$$

$$\frac{(A^2 \cdot D^2)}{(A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2)} = 1.73509$$

$$R_1 - \frac{N_2^2 \cdot N_3}{N_1 \cdot N_4^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_4^2 + 1)} = 0.00000$$

$$R_1 - \frac{(A^2 \cdot D^2)}{(A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2)} = 0.00000$$

$$\frac{(A^2 \cdot D^2)}{(A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2)} - \frac{N_2^2 \cdot N_3}{N_1 \cdot N_4^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_4^2 + 1)} = 0.00000$$

$$R_2 = 0.57634$$

$$\frac{(A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2)}{(A^2 \cdot D^2)} = 0.57634$$

$$R_2 - \frac{(A^2 \cdot C \cdot D^2 + C \cdot (A - B)^2)}{(A^2 \cdot D^2)} = 0.00000$$



2SMT7R1

Given.

Unit.  $ab := 1$      $N_1 := 3.08673$

$N_2 := 1.65226$      $N_3 := 1.42859$

$N_4 := 4.04461$      $N_5 := 2.29391$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$      $D := \frac{1}{N_4}$      $E := \frac{1}{N_5}$

Descriptions.

$jN_2 := 1 - \frac{N_2}{N_1}$      $bh := N_3 \cdot jN_2$      $ak := \frac{bh}{1 - jN_2}$

$bk := \sqrt{1 + ak^2}$      $bc := \frac{1}{bk}$      $ef := \frac{bc}{bk}$

$bf := N_4 \cdot ef$      $df := 1 - \frac{bf}{N_5}$      $R_1 := \frac{bf}{df}$

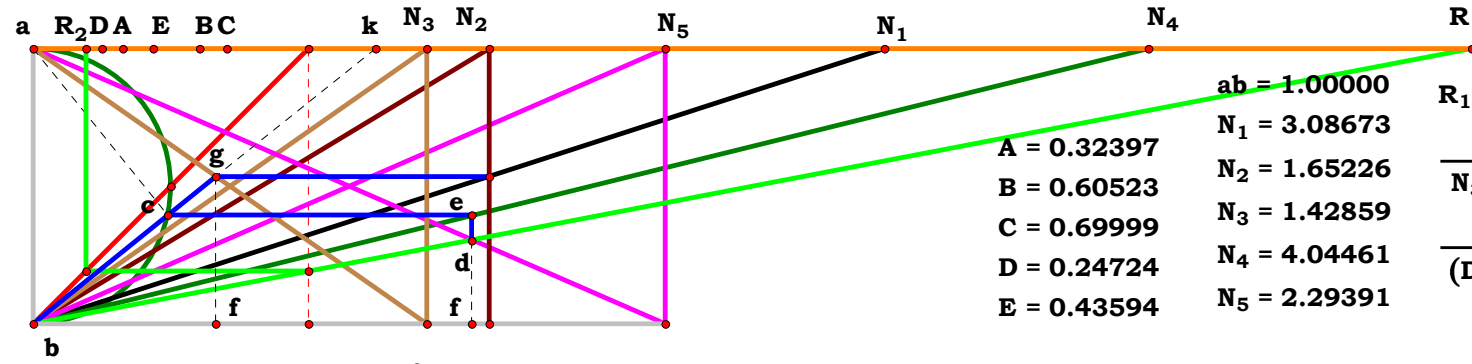
$R_2 := \frac{1}{R_1}$      $R_1 = 5.218135$

Definitions.

$$R_1 - \frac{N_2^2 \cdot N_4 \cdot N_5}{N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0$$

$$R_1 - \frac{A^2 \cdot C^2}{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)} = 0 \quad R_2 - \frac{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)}{A^2 \cdot C^2} = 0$$



$A = 0.32397$   
 $B = 0.60523$   
 $C = 0.69999$   
 $D = 0.24724$   
 $E = 0.43594$

$ab = 1.00000$   
 $N_1 = 3.08673$   
 $N_2 = 1.65226$   
 $N_3 = 1.42859$   
 $N_4 = 4.04461$   
 $N_5 = 2.29391$

$R_1 = 5.21807$

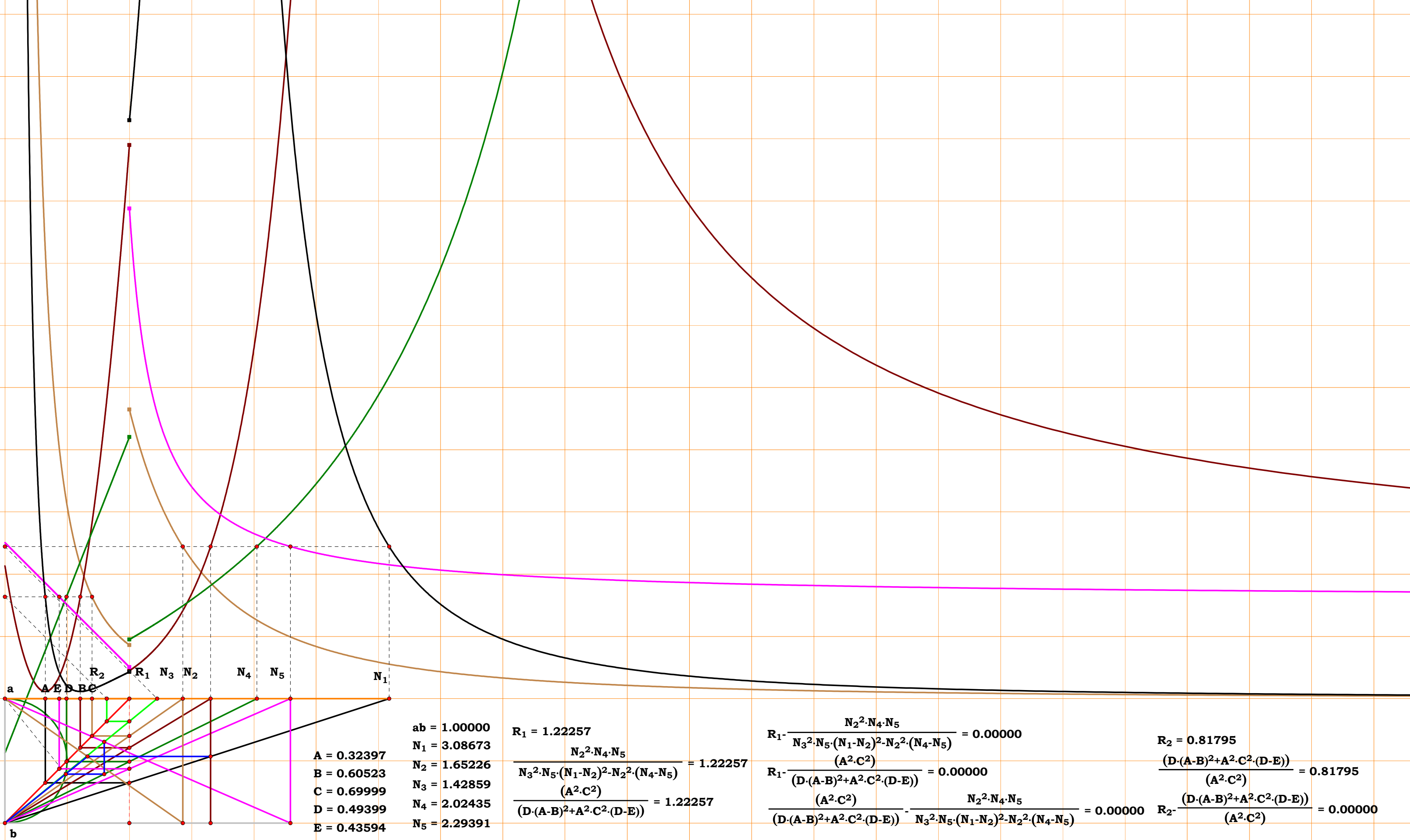
$$\frac{N_2^2 \cdot N_4 \cdot N_5}{N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5)} = 5.21807$$

$$\frac{(A^2 \cdot C^2)}{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E))} = 5.21807$$

$R_2 = 0.19164$

$$\frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E))}{(A^2 \cdot C^2)} = 0.19164$$

$$R_2 - \frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E))}{(A^2 \cdot C^2)} = 0.00000$$





2SMT7R2

Given.

Unit.  $ab := 1$   $N_1 := 5.15522$

$N_2 := 3.13452$   $N_3 := 1.13721$

$N_4 := 2.13334$   $N_5 := 1.61058$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$   $E := \frac{1}{N_5}$

Descriptions.

$jk := \frac{N_2}{N_1}$   $bk := N_3 \cdot (1 - jk)$   $ao := \frac{bk}{jk}$

$bo := \sqrt{1 + ao^2}$   $bh := \frac{1}{bo}$   $ef := \frac{bh}{bo}$

$bf := ef \cdot N_4$   $ac := \frac{bf}{N_5}$   $CG := \sqrt{ac \cdot (1 - ac)}$

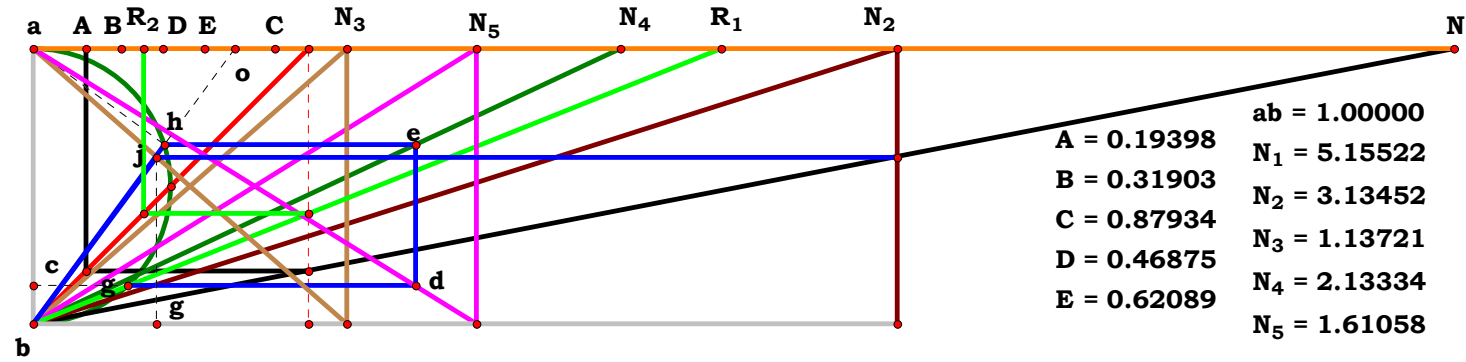
$R_1 := \frac{CG}{1 - ac}$   $R_2 := \frac{1}{R_1}$   $R_1 = 2.494447$

Definitions.

$$R_1 - \frac{N_2 \cdot \sqrt{N_4 \cdot N_5^2 \cdot [N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5)]}}{N_5 \cdot [N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5)]} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0$$

$$R_1 - \frac{A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)}}{A^2 \cdot [C^2 \cdot (D - E) + D] - B \cdot D \cdot (2 \cdot A - B)} = 0 \quad R_2 - \frac{A^2 \cdot [C^2 \cdot (D - E) + D] - B \cdot D \cdot (2 \cdot A - B)}{A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)}} = 0$$



A = 0.19398  
B = 0.31903  
C = 0.87934  
D = 0.46875  
E = 0.62089

ab = 1.00000  
N<sub>1</sub> = 5.15522  
N<sub>2</sub> = 3.13452  
N<sub>3</sub> = 1.13721  
N<sub>4</sub> = 2.13334  
N<sub>5</sub> = 1.61058

R<sub>1</sub> = 2.49446

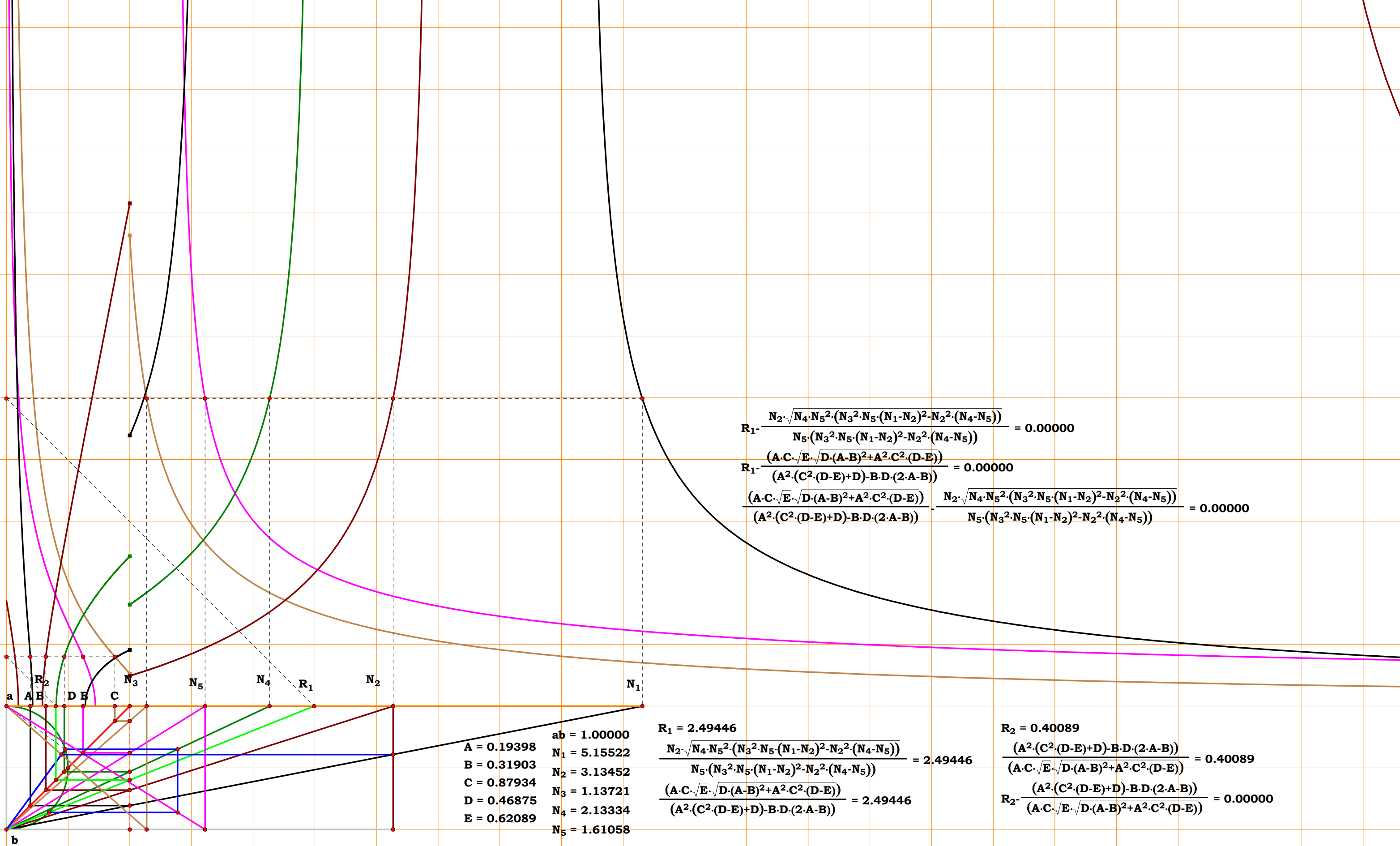
$$\frac{N_2 \cdot \sqrt{N_4 \cdot N_5^2 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))}}{N_5 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))} = 2.49446$$

$$\frac{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})}{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))} = 2.49446$$

R<sub>2</sub> = 0.40089

$$\frac{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))}{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})} = 0.40089$$

$$R_2 - \frac{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))}{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})} = 0.00000$$



$$R_1 - \frac{N_2 \cdot \sqrt{N_4 \cdot N_5^2 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))}}{N_5 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))} = 0.00000$$
$$R_1 - \frac{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})}{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))} = 0.00000$$
$$\frac{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})}{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))} - \frac{N_2 \cdot \sqrt{N_4 \cdot N_5^2 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))}}{N_5 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))} = 0.00000$$

$ab = 1.00000$   
 $A = 0.19398$   
 $B = 0.31903$   
 $C = 0.87934$   
 $D = 0.46875$   
 $E = 0.62089$   
 $N_1 = 5.15522$   
 $N_2 = 3.13452$   
 $N_3 = 1.13721$   
 $N_4 = 2.13334$   
 $N_5 = 1.61058$

$R_1 = 2.49446$

$$\frac{N_2 \cdot \sqrt{N_4 \cdot N_5^2 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))}}{N_5 \cdot (N_3^2 \cdot N_5 \cdot (N_1 - N_2)^2 - N_2^2 \cdot (N_4 - N_5))} = 2.49446$$
$$\frac{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})}{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))} = 2.49446$$

$R_2 = 0.40089$

$$\frac{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))}{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})} = 0.40089$$
$$R_2 - \frac{(A^2 \cdot (C^2 \cdot (D - E) + D) - B \cdot D \cdot (2 \cdot A - B))}{(A \cdot C \cdot \sqrt{E} \cdot \sqrt{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot (D - E)})} = 0.00000$$



2SMT7R3

Given.

Unit.  $ab := 1$      $N_1 := 2.23143$

$N_2 := 2.97345$      $N_3 := 1.83880$

$N_4 := 1.49169$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$      $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{N_1^2 + 1}$      $bc := \frac{1}{bN_1}$      $cd := \frac{bc}{bN_1}$

$gh := N_4 \cdot cd$      $bg := N_4 - gh$      $eg := \frac{bg}{N_3}$

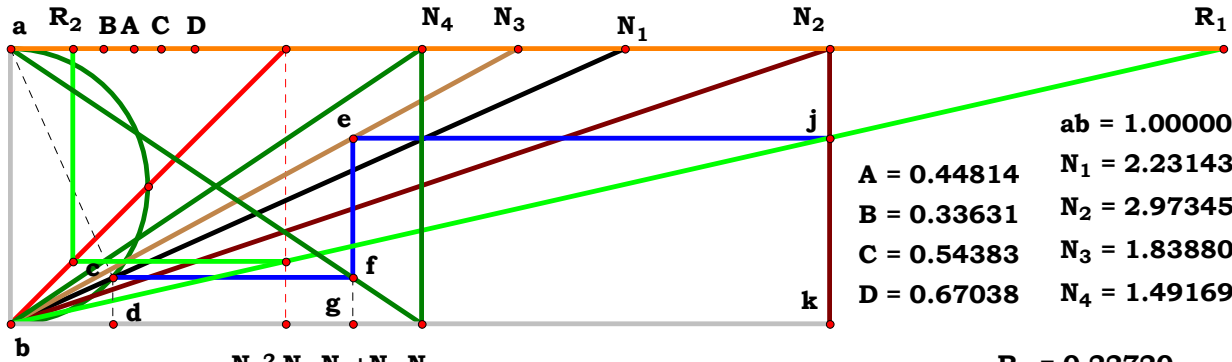
$R_1 := \frac{N_2}{eg}$      $R_2 := \frac{1}{R_1}$      $R_1 = 4.401482$

Definitions.

$$R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{D \cdot (A^2 + 1)}{B \cdot C} = 0 \quad R_2 - \frac{B \cdot C}{D \cdot (A^2 + 1)} = 0$$



$$R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} = 0.00000$$

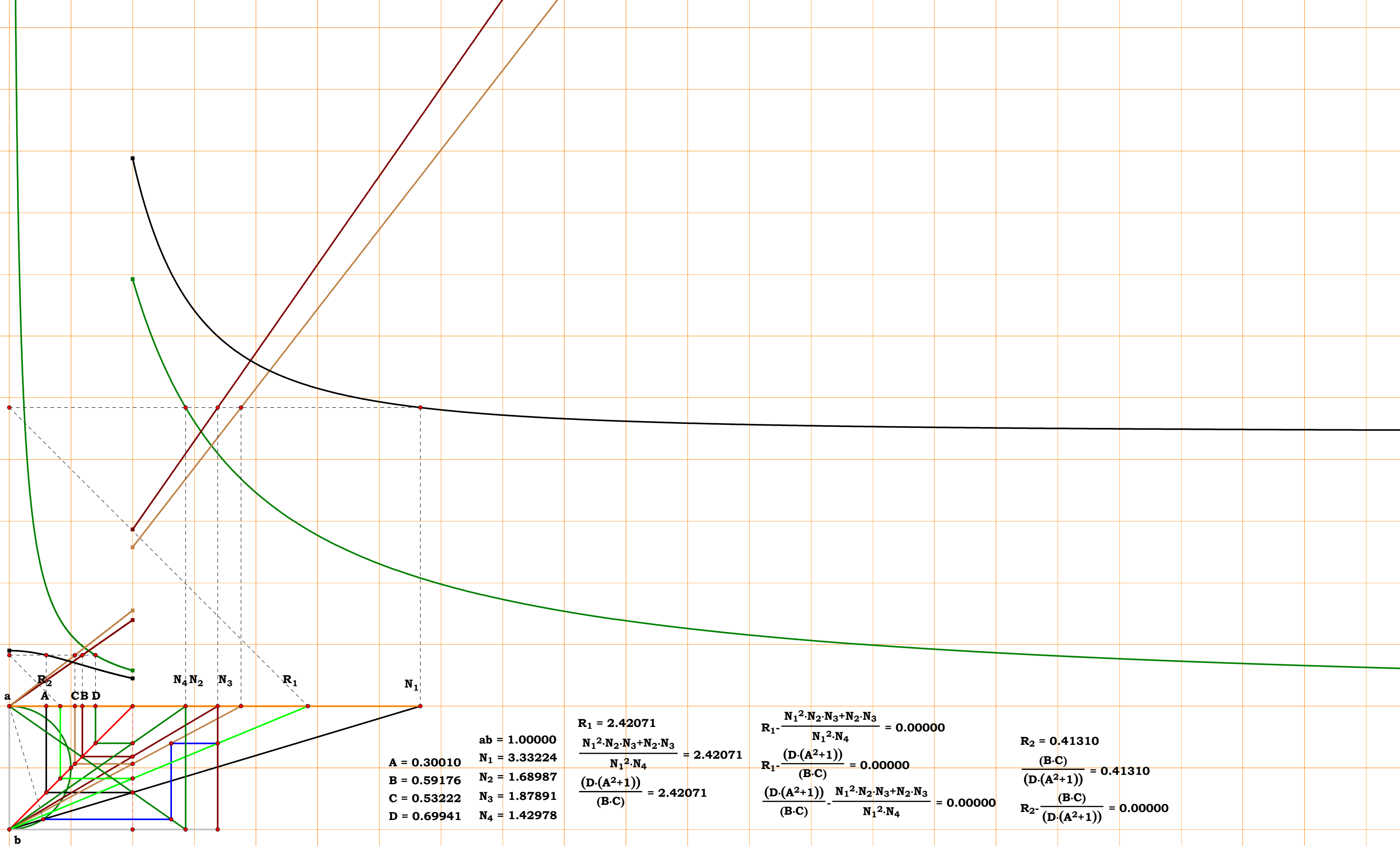
$$R_1 - \frac{(D \cdot (A^2 + 1))}{(B \cdot C)} = 0.00000$$

$$\frac{(D \cdot (A^2 + 1))}{(B \cdot C)} - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} = 0.00000$$

$ab = 1.00000$   
 $N_1 = 2.23143$   
 $N_2 = 2.97345$   
 $N_3 = 1.83880$   
 $N_4 = 1.49169$

$R_2 = 0.22720$   
 $\frac{(B \cdot C)}{(D \cdot (A^2 + 1))} = 0.22720$   
 $R_2 - \frac{(B \cdot C)}{(D \cdot (A^2 + 1))} = 0.00000$

$R_1 = 4.40149$   
 $\frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} = 4.40149$   
 $\frac{(D \cdot (A^2 + 1))}{(B \cdot C)} = 4.40149$



**A = 0.30010**  
**B = 0.59176**  
**C = 0.53222**  
**D = 0.69941**

**ab = 1.00000**  
**N<sub>1</sub> = 3.33224**  
**N<sub>2</sub> = 1.68987**  
**N<sub>3</sub> = 1.87891**  
**N<sub>4</sub> = 1.42978**

$$\begin{aligned}
 R_1 &= 2.42071 \\
 \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} &= 2.42071 \\
 \frac{(D \cdot (A^2 + 1))}{(B \cdot C)} &= 2.42071
 \end{aligned}$$

$$\begin{aligned}
 R_1 - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} &= 0.00000 \\
 R_1 - \frac{(D \cdot (A^2 + 1))}{(B \cdot C)} &= 0.00000 \\
 \frac{(D \cdot (A^2 + 1))}{(B \cdot C)} - \frac{N_1^2 \cdot N_2 \cdot N_3 + N_2 \cdot N_3}{N_1^2 \cdot N_4} &= 0.00000
 \end{aligned}$$

$$\begin{aligned}
 R_2 &= 0.41310 \\
 \frac{(B \cdot C)}{(D \cdot (A^2 + 1))} &= 0.41310 \\
 R_2 - \frac{(B \cdot C)}{(D \cdot (A^2 + 1))} &= 0.00000
 \end{aligned}$$



2SMT7R4

Given.

Unit.  $ab := 1$

$N_1 := 2.39288$   $N_2 := 1.32039$   $N_3 := 1.94001$

$N_4 := 2.76890$   $N_5 := 1.46159$   $N_6 := 1.64247$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$

$D := \frac{1}{N_4}$   $E := \frac{1}{N_5}$   $F := \frac{1}{N_6}$

Descriptions.

$gh := \frac{N_2}{N_1}$   $bh := N_3 \cdot (1 - gh)$   $aj := \frac{bh}{gh}$

$bj := \sqrt{1 + aj^2}$   $bf := \frac{1}{bj}$   $de := \frac{bf}{bj}$

$be := de \cdot N_4$   $ce := 1 - \frac{be}{N_5}$

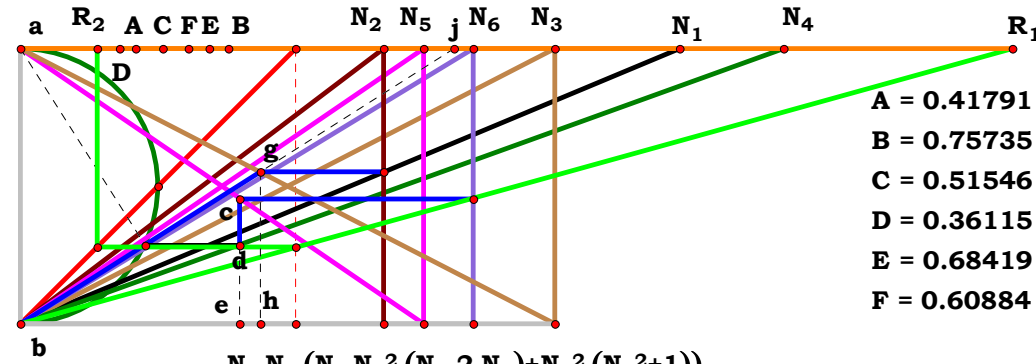
$R_1 := \frac{N_6}{ce}$   $R_2 := \frac{1}{R_1}$   $R_1 = 3.601115$

Definitions.

$$R_1 - \frac{N_5 \cdot N_6 \cdot \left[ N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1) \right]}{N_5 \cdot \left[ N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1) \right] - N_2^2 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0 \quad N_6 - \frac{1}{F} = 0$$

$$R_1 - \frac{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D}{D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E)} = 0 \quad R_2 - \frac{D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E)}{D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D} = 0$$



$ab = 1.00000$

$N_1 = 2.39288$

$N_2 = 1.32039$

$N_3 = 1.94001$

$N_4 = 2.76890$

$N_5 = 1.46159$

$N_6 = 1.64247$

$A = 0.41791$

$B = 0.75735$

$C = 0.51546$

$D = 0.36115$

$E = 0.68419$

$F = 0.60884$

$R_1 = 3.60105$

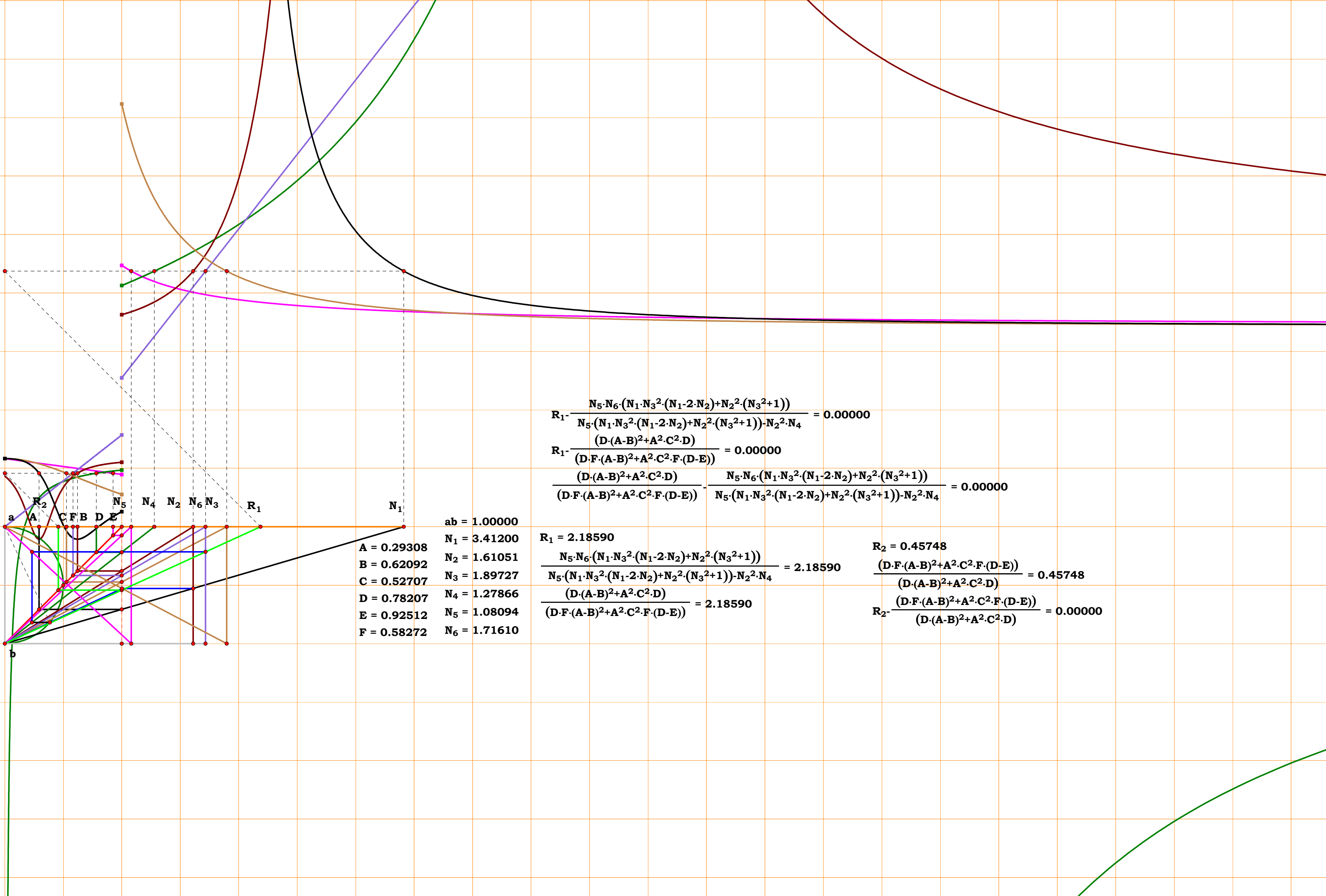
$$\frac{N_5 \cdot N_6 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1))}{N_5 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1)) - N_2^2 \cdot N_4} = 3.60105$$

$$\frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)}{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))} = 3.60105$$

$R_2 = 0.27770$

$$\frac{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))}{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)} = 0.27770$$

$$R_2 - \frac{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))}{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)} = 0.00000$$



A = 0.29308  
B = 0.62092  
C = 0.52707  
D = 0.78207  
E = 0.92512  
F = 0.58272

ab = 1.00000  
N<sub>1</sub> = 3.41200  
N<sub>2</sub> = 1.61051  
N<sub>3</sub> = 1.89727  
N<sub>4</sub> = 1.27866  
N<sub>5</sub> = 1.08094  
N<sub>6</sub> = 1.71610

$$R_1 \cdot \frac{N_5 \cdot N_6 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1))}{N_5 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1)) - N_2^2 \cdot N_4} = 0.00000$$
$$R_1 \cdot \frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)}{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))} = 0.00000$$
$$\frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)}{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))} - \frac{N_5 \cdot N_6 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1))}{N_5 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1)) - N_2^2 \cdot N_4} = 0.00000$$

R<sub>1</sub> = 2.18590

$$\frac{N_5 \cdot N_6 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1))}{N_5 \cdot (N_1 \cdot N_3^2 \cdot (N_1 - 2 \cdot N_2) + N_2^2 \cdot (N_3^2 + 1)) - N_2^2 \cdot N_4} = 2.18590$$
$$\frac{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)}{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))} = 2.18590$$

R<sub>2</sub> = 0.45748

$$\frac{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))}{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)} = 0.45748$$
$$R_2 \cdot \frac{(D \cdot F \cdot (A - B)^2 + A^2 \cdot C^2 \cdot F \cdot (D - E))}{(D \cdot (A - B)^2 + A^2 \cdot C^2 \cdot D)} = 0.00000$$



2SMT7R5

Given.

Unit.  $ab := 1$   $N_1 := 2.85735$

$N_2 := 1.39447$   $N_3 := 1.71014$

$N_4 := 2.12984$   $N_5 := 2.44336$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$   $E := \frac{1}{N_5}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$   $bd := \frac{1}{bN_1}$   $de := \frac{bd}{bN_1}$

$be := N_1 \cdot de$   $ce := \frac{be}{N_2}$   $bh := N_3 \cdot (1 - ce)$

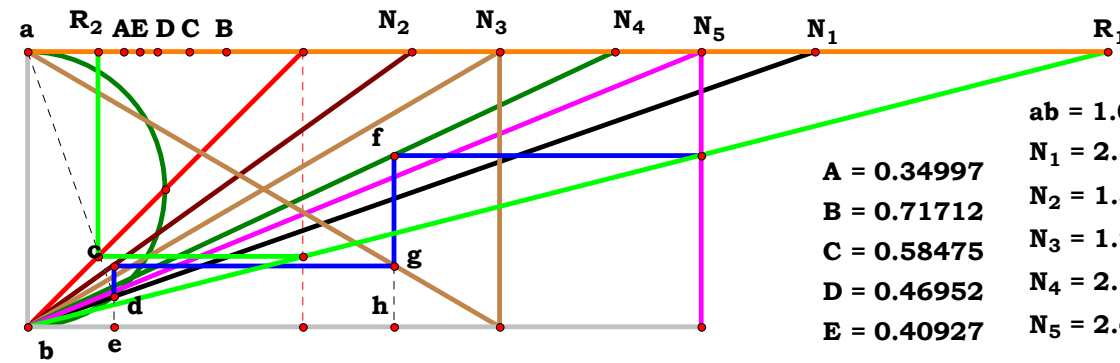
$fh := \frac{bh}{N_4}$   $R_1 := \frac{N_5}{fh}$   $R_2 := \frac{1}{R_1}$   $R_1 = 3.919317$

Definitions.

$$R_1 - \frac{N_2 \cdot N_4 \cdot N_5 \cdot (N_1^2 + 1)}{N_3 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0 \quad N_5 - \frac{1}{E} = 0$$

$$R_1 - \frac{C \cdot (A^2 + 1)}{D \cdot E \cdot (A^2 - B \cdot A + 1)} = 0 \quad R_2 - \frac{D \cdot E \cdot (A^2 - B \cdot A + 1)}{C \cdot (A^2 + 1)} = 0$$



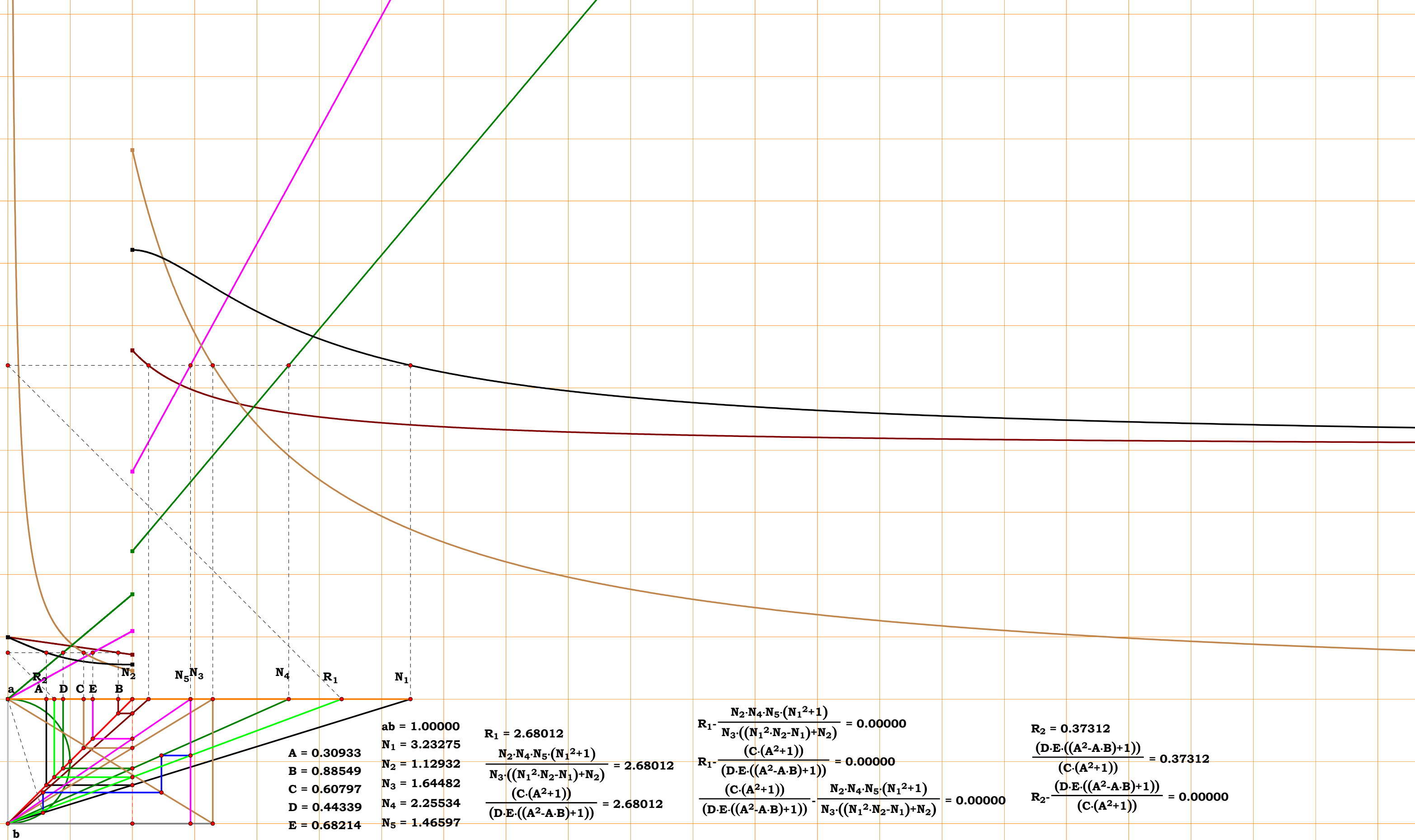
$A = 0.34997$   
 $B = 0.71712$   
 $C = 0.58475$   
 $D = 0.46952$   
 $E = 0.40927$

$ab = 1.00000$   
 $N_1 = 2.85735$   
 $N_2 = 1.39447$   
 $N_3 = 1.71014$   
 $N_4 = 2.12984$   
 $N_5 = 2.44336$

$R_1 = 3.91933$   
 $\frac{N_2 \cdot N_4 \cdot N_5 \cdot (N_1^2 + 1)}{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)} = 3.91933$   
 $\frac{(C \cdot (A^2 + 1))}{(D \cdot E \cdot ((A^2 - A \cdot B) + 1))} = 3.91933$

$R_2 = 0.25515$   
 $\frac{(D \cdot E \cdot ((A^2 - A \cdot B) + 1))}{(C \cdot (A^2 + 1))} = 0.25515$

$R_2 - \frac{(D \cdot E \cdot ((A^2 - A \cdot B) + 1))}{(C \cdot (A^2 + 1))} = 0.00000$





2SMT7R6

Given.

Unit.  $ab := 1$

$N_1 := 2.64953 \quad N_2 := 1.24109$

$N_3 := 1.45116 \quad N_4 := 1.77041$

$A := \frac{1}{N_1} \quad B := \frac{1}{N_2} \quad C := \frac{1}{N_3} \quad D := \frac{1}{N_4}$

Descriptions.

$hj := \frac{N_4}{N_4 + N_1} \quad ce := \sqrt{hj \cdot (1 - hj)} \quad df := \frac{ce}{N_3}$

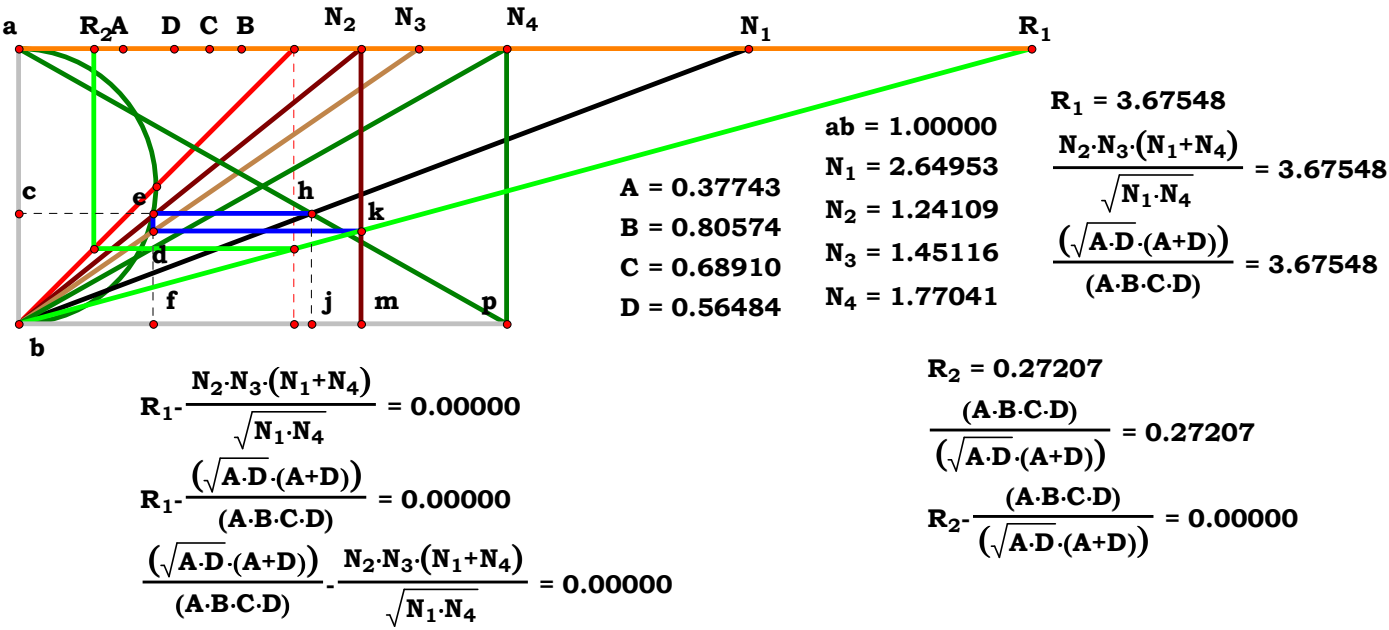
$R_1 := \frac{N_2}{df} \quad R_2 := \frac{1}{R_1} \quad R_1 = 3.675476$

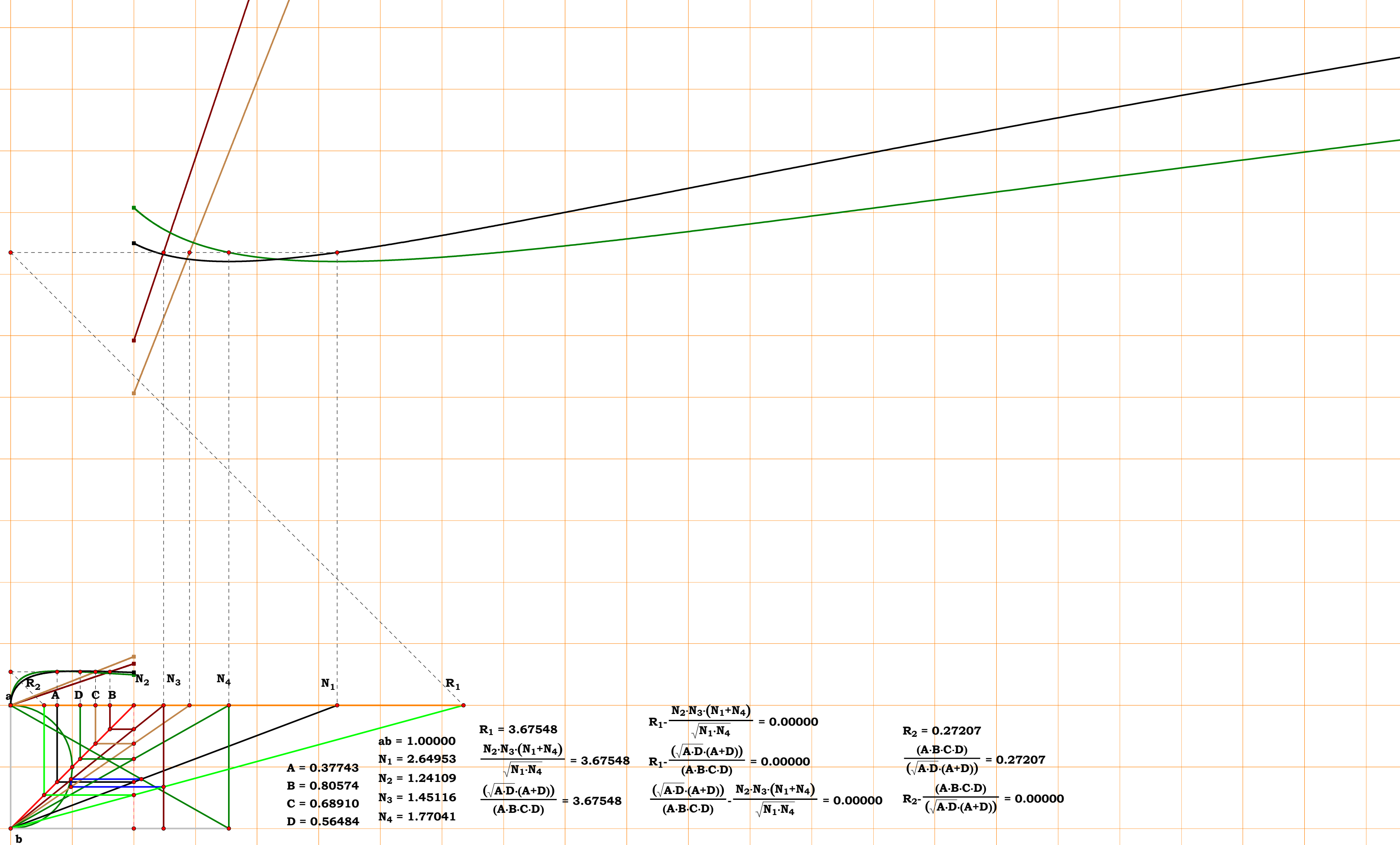
Definitions.

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1 + N_4)}{\sqrt{N_1 \cdot N_4}} = 0$

$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$

$R_1 - \frac{\sqrt{A \cdot D} \cdot (A + D)}{A \cdot B \cdot C \cdot D} = 0 \quad R_2 - \frac{A \cdot B \cdot C \cdot D}{\sqrt{A \cdot D} \cdot (A + D)} = 0$







2SMT8R0

Given.

Unit.  $AB := 1$

$N_1 := 2.51564$   $N_2 := 2.13177$

$N_3 := 1.54776$   $N_4 := 1.24254$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$

Descriptions.

$gh := \frac{N_3}{N_2 + N_3}$   $bh := \frac{N_2 \cdot N_3}{N_2 + N_3}$   $be := \frac{gh \cdot N_1}{N_1 - bh}$

$cd := N_4 \cdot (1 - be)$   $ac := \frac{1}{2} - \sqrt{\left(\frac{1}{2}\right)^2 - cd^2}$

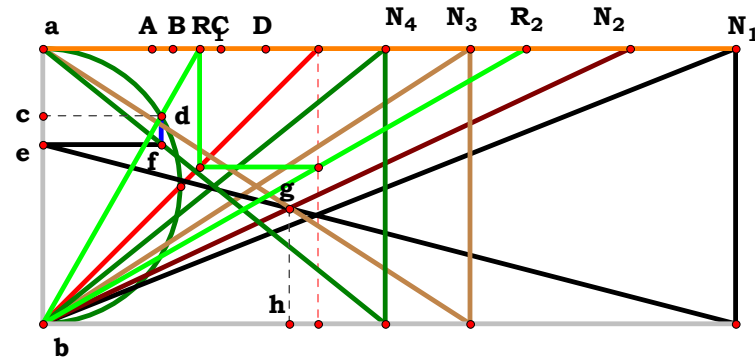
$R_1 := \frac{cd}{1 - ac}$   $R_2 := \frac{1}{R_1}$   $R_1 = 0.570412$

Definitions.

$$R_1 - \frac{2 \cdot N_2 \cdot N_4 \cdot (N_1 - N_3)}{\sqrt{(N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3)^2 - 4 \cdot N_2^2 \cdot N_4^2 \cdot (N_1 - N_3)^2 + N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3}} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{2 \cdot (A - C)}{D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2}} = 0 \quad R_2 - \frac{D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2}}{2 \cdot (A - C)} = 0$$



$A = 0.39751$   
 $B = 0.46909$   
 $C = 0.64609$   
 $D = 0.80480$

$ab = 1.00000$   
 $N_1 = 2.51564$   
 $N_2 = 2.13177$   
 $N_3 = 1.54776$   
 $N_4 = 1.24254$

$R_1 = 0.57041$

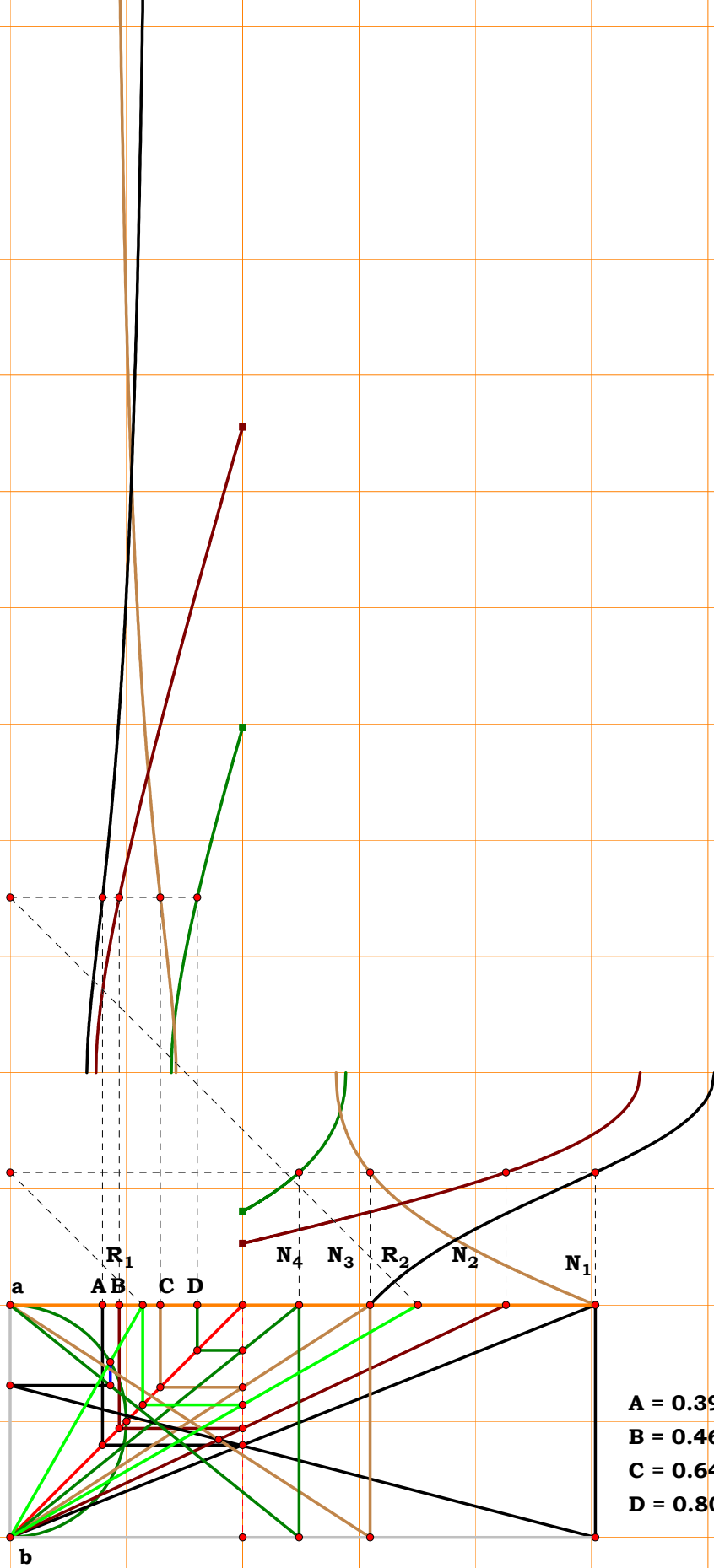
$$\frac{2 \cdot N_2 \cdot N_4 \cdot (N_1 - N_3)}{\sqrt{((N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3)^2 - 4 \cdot N_2^2 \cdot N_4^2 \cdot (N_1 - N_3)^2 + N_1 \cdot N_2 + N_1 \cdot N_3} - N_2 \cdot N_3} = 0.57041$$

$$\frac{(2 \cdot (A - C))}{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})} = 0.57041$$

$R_2 = 1.75314$

$$\frac{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})}{(2 \cdot (A - C))} = 1.75314$$

$$R_2 - \frac{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})}{(2 \cdot (A - C))} = 0.00000$$



**A = 0.39751**  
**B = 0.46909**  
**C = 0.64609**  
**D = 0.80480**

**ab = 1.00000**  
**N<sub>1</sub> = 2.51564**  
**N<sub>2</sub> = 2.13177**  
**N<sub>3</sub> = 1.54776**  
**N<sub>4</sub> = 1.24254**

**R<sub>1</sub> = 0.57041**

$$\begin{aligned}
 &\frac{2 \cdot N_2 \cdot N_4 \cdot (N_1 - N_3)}{\left( \sqrt{\left( (N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3 \right)^2 - 4 \cdot N_2^2 \cdot N_4^2 \cdot (N_1 - N_3)^2} + N_1 \cdot N_2 + N_1 \cdot N_3 \right) - N_2 \cdot N_3} = 0.57041 \\
 &\frac{(2 \cdot (A - C))}{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})} = 0.57041
 \end{aligned}$$

**R<sub>2</sub> = 1.75314**

$$\begin{aligned}
 &\frac{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})}{(2 \cdot (A - C))} = 1.75314 \\
 &R_2 - \frac{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})}{(2 \cdot (A - C))} = 0.00000
 \end{aligned}$$

$$\begin{aligned}
 &R_1 - \frac{2 \cdot N_2 \cdot N_4 \cdot (N_1 - N_3)}{\left( \sqrt{\left( (N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3 \right)^2 - 4 \cdot N_2^2 \cdot N_4^2 \cdot (N_1 - N_3)^2} + N_1 \cdot N_2 + N_1 \cdot N_3 \right) - N_2 \cdot N_3} = 0.00000 \\
 &R_1 - \frac{(2 \cdot (A - C))}{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})} = 0.00000 \\
 &\frac{(2 \cdot (A - C))}{(D \cdot (A - B - C) - \sqrt{D^2 \cdot (A - B - C)^2 - 4 \cdot (A - C)^2})} - \frac{2 \cdot N_2 \cdot N_4 \cdot (N_1 - N_3)}{\left( \sqrt{\left( (N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3 \right)^2 - 4 \cdot N_2^2 \cdot N_4^2 \cdot (N_1 - N_3)^2} + N_1 \cdot N_2 + N_1 \cdot N_3 \right) - N_2 \cdot N_3} = 0.00000
 \end{aligned}$$



2SMT8R1

Given.

Unit.  $ab := 1$      $N_1 := 2.41935$

$N_2 := 5.16684$      $N_3 := 1.49689$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

Descriptions.

$ef := \frac{N_3}{N_3 + N_2}$      $bf := N_2 \cdot ef$      $bc := \frac{ef \cdot N_1}{N_1 - bf}$

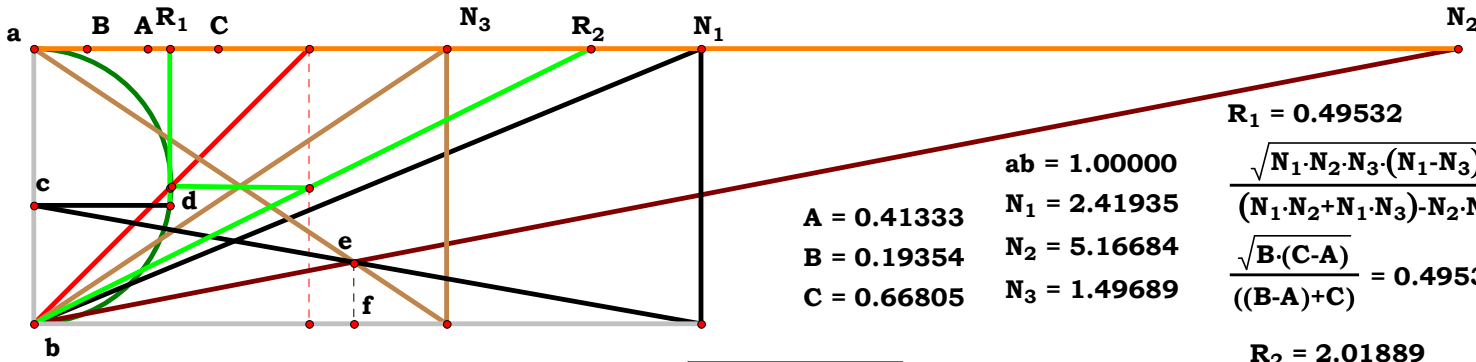
$R_1 := \sqrt{bc \cdot (1 - bc)}$      $R_2 := \frac{1}{R_1}$      $R_1 = 0.495322$

Definitions.

$R_1 - \frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3)} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{\sqrt{B \cdot (C - A)}}{B - A + C} = 0$      $R_2 - \frac{B - A + C}{\sqrt{B \cdot (C - A)}} = 0$



$A = 0.41333$      $B = 0.19354$      $C = 0.66805$

$ab = 1.00000$      $N_1 = 2.41935$      $N_2 = 5.16684$      $N_3 = 1.49689$

$R_1 - \frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3)} = 0.00000$

$R_1 - \frac{\sqrt{B \cdot (C - A)}}{(B - A) + C} = 0.00000$

$\frac{\sqrt{B \cdot (C - A)}}{(B - A) + C} - \frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3)} = 0.00000$

$R_1 = 0.49532$

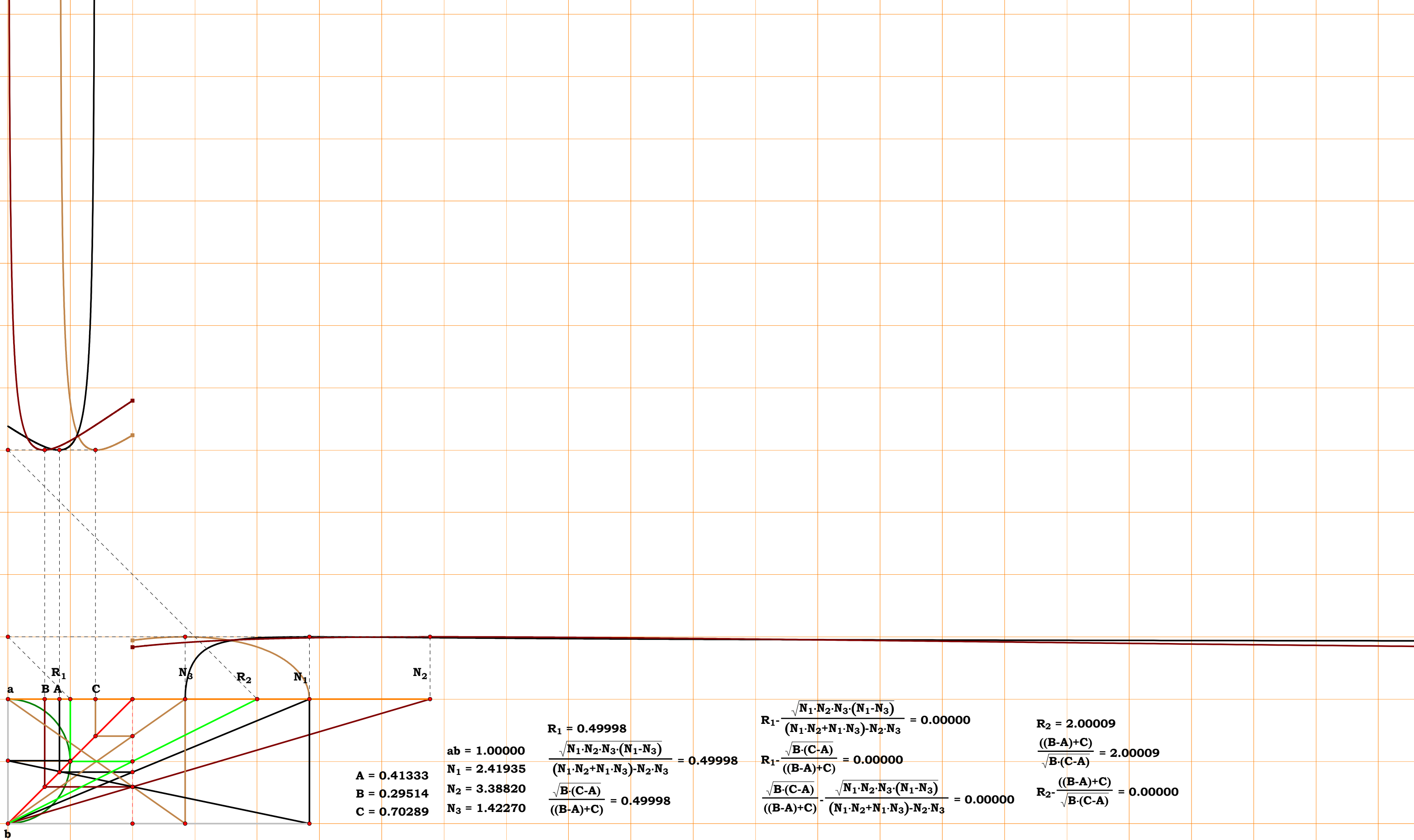
$\frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3 - N_2 \cdot N_3)} = 0.49532$

$\frac{\sqrt{B \cdot (C - A)}}{(B - A) + C} = 0.49532$

$R_2 = 2.01889$

$\frac{((B - A) + C)}{\sqrt{B \cdot (C - A)}} = 2.01889$

$R_2 - \frac{((B - A) + C)}{\sqrt{B \cdot (C - A)}} = 0.00000$



$A = 0.41333$   
 $B = 0.29514$   
 $C = 0.70289$

$ab = 1.00000$   
 $N_1 = 2.41935$   
 $N_2 = 3.38820$   
 $N_3 = 1.42270$

$$R_1 = 0.49998$$
$$\frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3} = 0.49998$$
$$\frac{\sqrt{B \cdot (C - A)}}{((B - A) + C)} = 0.49998$$

$$R_1 - \frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3} = 0.00000$$
$$R_1 - \frac{\sqrt{B \cdot (C - A)}}{((B - A) + C)} = 0.00000$$
$$\frac{\sqrt{B \cdot (C - A)}}{((B - A) + C)} - \frac{\sqrt{N_1 \cdot N_2 \cdot N_3 \cdot (N_1 - N_3)}}{(N_1 \cdot N_2 + N_1 \cdot N_3) - N_2 \cdot N_3} = 0.00000$$

$$R_2 = 2.00009$$
$$\frac{((B - A) + C)}{\sqrt{B \cdot (C - A)}} = 2.00009$$
$$R_2 - \frac{((B - A) + C)}{\sqrt{B \cdot (C - A)}} = 0.00000$$

**2SMT8R2**

**Unit.  $ab := 1$      $N_1 := 2.66682$**

$$\mathbf{N}_2 := 1.95791 \quad \mathbf{N}_3 := 1.47202$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

### Descriptions.

$$\mathbf{ef} := \frac{N_3}{N_3 + N_2} \quad \mathbf{bf} := N_2 \cdot \mathbf{ef}$$

$$\mathbf{bc} := \frac{\mathbf{ef} \cdot \mathbf{N}_1}{\mathbf{N}_1 - \mathbf{bf}} \quad \mathbf{cd} := \sqrt{\mathbf{bc} \cdot (1 - \mathbf{bc})}$$

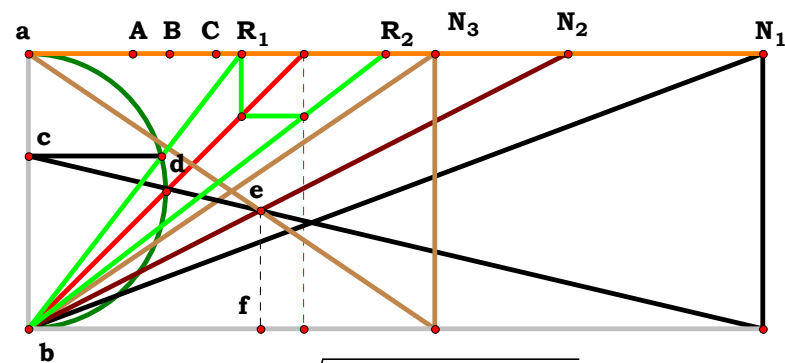
$$\mathbf{R}_1 := \frac{\mathbf{cd}}{\mathbf{bc}} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 0.771952$$

### Definitions.

$$R_1 - \frac{\sqrt{(N_1^2 \cdot N_2 \cdot N_3 - N_1 \cdot N_2 \cdot N_3^2)}}{N_1 \cdot N_3} = 0$$

$$\mathbf{N}_1 - \frac{1}{\mathbf{A}} = 0 \quad \mathbf{N}_2 - \frac{1}{\mathbf{B}} = 0 \quad \mathbf{N}_3 - \frac{1}{\mathbf{C}} = 0$$

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{C}-\mathbf{A}}}{\sqrt{\mathbf{B}}} = 0 \quad \mathbf{R}_2 - \frac{\sqrt{\mathbf{B}}}{\sqrt{\mathbf{C}-\mathbf{A}}} = 0$$



$$R_1 - \frac{\sqrt{N_1^2 \cdot N_2 \cdot N_3 - N_1 \cdot N_2 \cdot N_3^2}}{N_1 \cdot N_3} = 0.00000$$

$$R_1 - \frac{\sqrt{C-A}}{\sqrt{B}} = 0.00000$$

$$\frac{\sqrt{\mathbf{C-A}}}{\sqrt{\mathbf{B}}} - \frac{\sqrt{\mathbf{N_1^2 \cdot N_2 \cdot N_3 - N_1 \cdot N_2 \cdot N_3^2}}}{\mathbf{N_1 \cdot N_3}} = 0.00000$$

**A = 0.37498**

**B = 0.51075**

**C = 0.67934**

**ab = 1.00000**

$$N_1 = 2.66682$$

$$N_2 = 1.95791$$

$$N_3 = 1.47202$$

$$R_1 = 0.77195$$

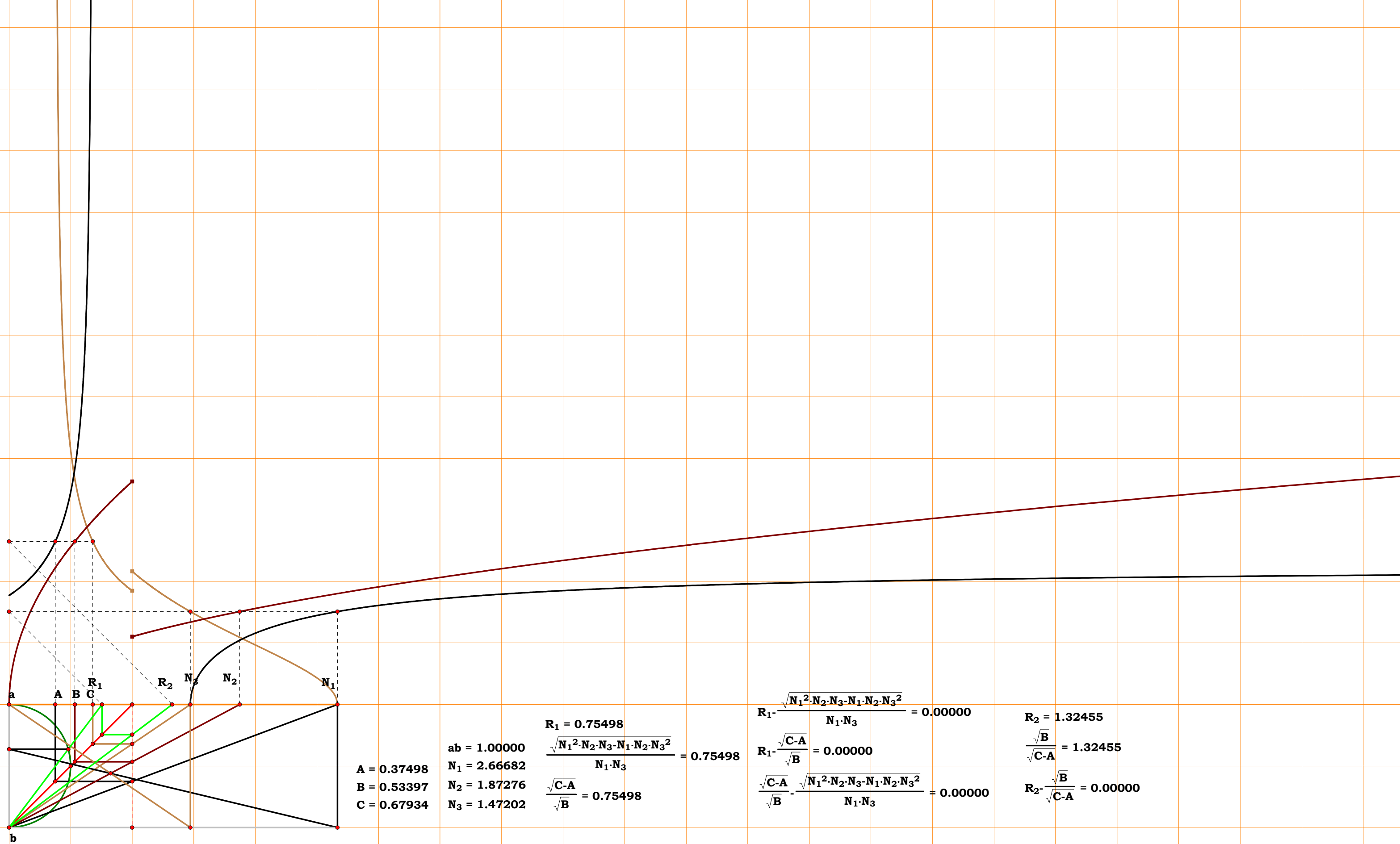
$$\frac{\sqrt{N_1^2 \cdot N_2 \cdot N_3 - N_1 \cdot N_2 \cdot N_3^2}}{N_1 \cdot N_3} = 0.77195$$

$$\frac{\sqrt{\mathbf{C-A}}}{\sqrt{\mathbf{B}}} = 0.77195$$

$$R_2 = 1.29542$$

$$\frac{\sqrt{\mathbf{B}}}{\sqrt{\mathbf{C-A}}} = 1.29542$$

$$R_2 - \frac{\sqrt{B}}{\sqrt{C-A}} = 0.00000$$





Given.

Unit.  $ab := 1$

$N_1 := 2.30837$      $N_2 := 1.53764$

$N_3 := 3.10851$      $N_4 := 1.86859$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$      $D := \frac{1}{N_4}$

Descriptions.

$fg := \frac{N_4}{N_3 + N_4}$      $bg := fg \cdot N_3$      $bc := \frac{fg \cdot N_1}{N_1 - bg}$

$bN_2 := \sqrt{1 + N_2^2}$      $bd := \frac{1}{bN_2}$      $de := \frac{bd}{bN_2}$

$be := N_2 \cdot de$      $R_1 := \frac{be \cdot bc}{bc - de}$      $R_2 := \frac{1}{R_1}$

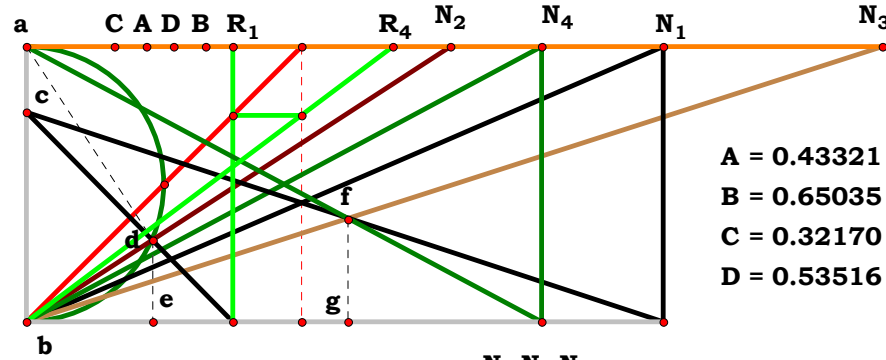
$R_2 := \frac{1}{R_1}$      $R_1 = 0.75102$

Definitions.

$$R_1 - \frac{N_1 \cdot N_2 \cdot N_4}{N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3 + N_3 \cdot N_4} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{B \cdot C}{B^2 \cdot (A - D) + C} = 0 \quad R_2 - \frac{B^2 \cdot (A - D) + C}{B \cdot C} = 0$$



$A = 0.43321$   
 $B = 0.65035$   
 $C = 0.32170$   
 $D = 0.53516$

$ab = 1.00000$   
 $N_1 = 2.30837$   
 $N_2 = 1.53764$   
 $N_3 = 3.10851$   
 $N_4 = 1.86859$

$$R_1 = 0.75101$$

$$\frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.75101$$

$$\frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} = 0.75101$$

$$R_1 - \frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.00000$$

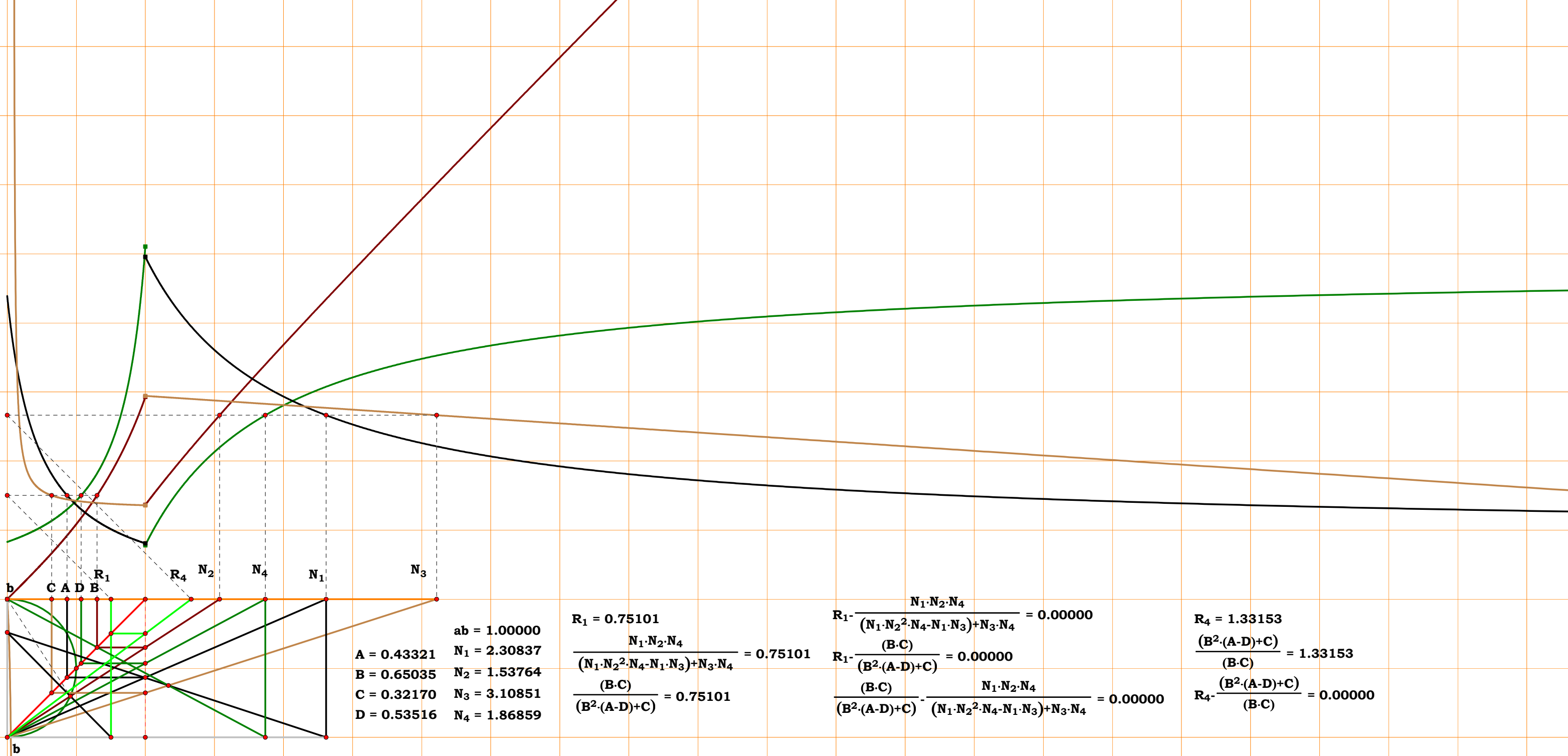
$$R_1 - \frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} = 0.00000$$

$$\frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} - \frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.00000$$

$$R_4 = 1.33153$$

$$\frac{(B^2 \cdot (A - D) + C)}{(B \cdot C)} = 1.33153$$

$$R_4 - \frac{(B^2 \cdot (A - D) + C)}{(B \cdot C)} = 0.00000$$



$ab = 1.00000$   
 $A = 0.43321$     $N_1 = 2.30837$   
 $B = 0.65035$     $N_2 = 1.53764$   
 $C = 0.32170$     $N_3 = 3.10851$   
 $D = 0.53516$     $N_4 = 1.86859$

$$R_1 = 0.75101$$

$$\frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.75101$$

$$\frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} = 0.75101$$

$$R_1 - \frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.00000$$

$$R_1 - \frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} = 0.00000$$

$$\frac{(B \cdot C)}{(B^2 \cdot (A - D) + C)} - \frac{N_1 \cdot N_2 \cdot N_4}{(N_1 \cdot N_2^2 \cdot N_4 - N_1 \cdot N_3) + N_3 \cdot N_4} = 0.00000$$

$$R_4 = 1.33153$$

$$\frac{(B^2 \cdot (A - D) + C)}{(B \cdot C)} = 1.33153$$

$$R_4 - \frac{(B^2 \cdot (A - D) + C)}{(B \cdot C)} = 0.00000$$

**Given.**

**Unit.**   **ab** := 1     **N<sub>1</sub>** := 2.11748

$$\mathbf{N}_2 := 1.55346 \quad \mathbf{N}_3 := 3.45928$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

### Descriptions.

$$\mathbf{be} := \frac{N_2}{N_2 + N_3} \quad \mathbf{ef} := \sqrt{\mathbf{be} \cdot (1 - \mathbf{be})}$$

$$\mathbf{bc} := \frac{\mathbf{be} \cdot \mathbf{N_1}}{\mathbf{N_1} - \mathbf{ef}} \quad \mathbf{CD} := \sqrt{\mathbf{bc} \cdot (1 - \mathbf{bc})} \quad \mathbf{R_1} := \frac{\mathbf{CD}}{\mathbf{bc}}$$

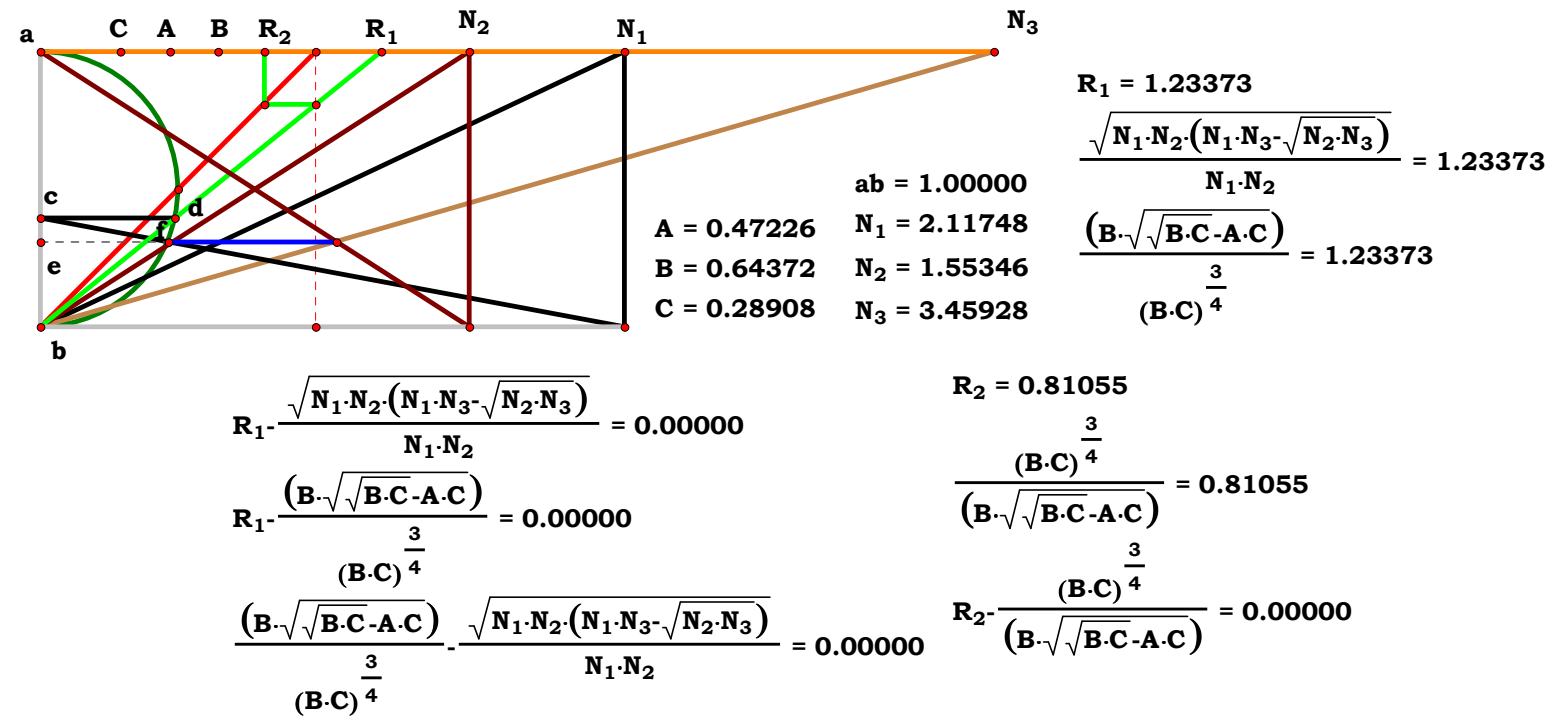
$$\mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 1.233731$$

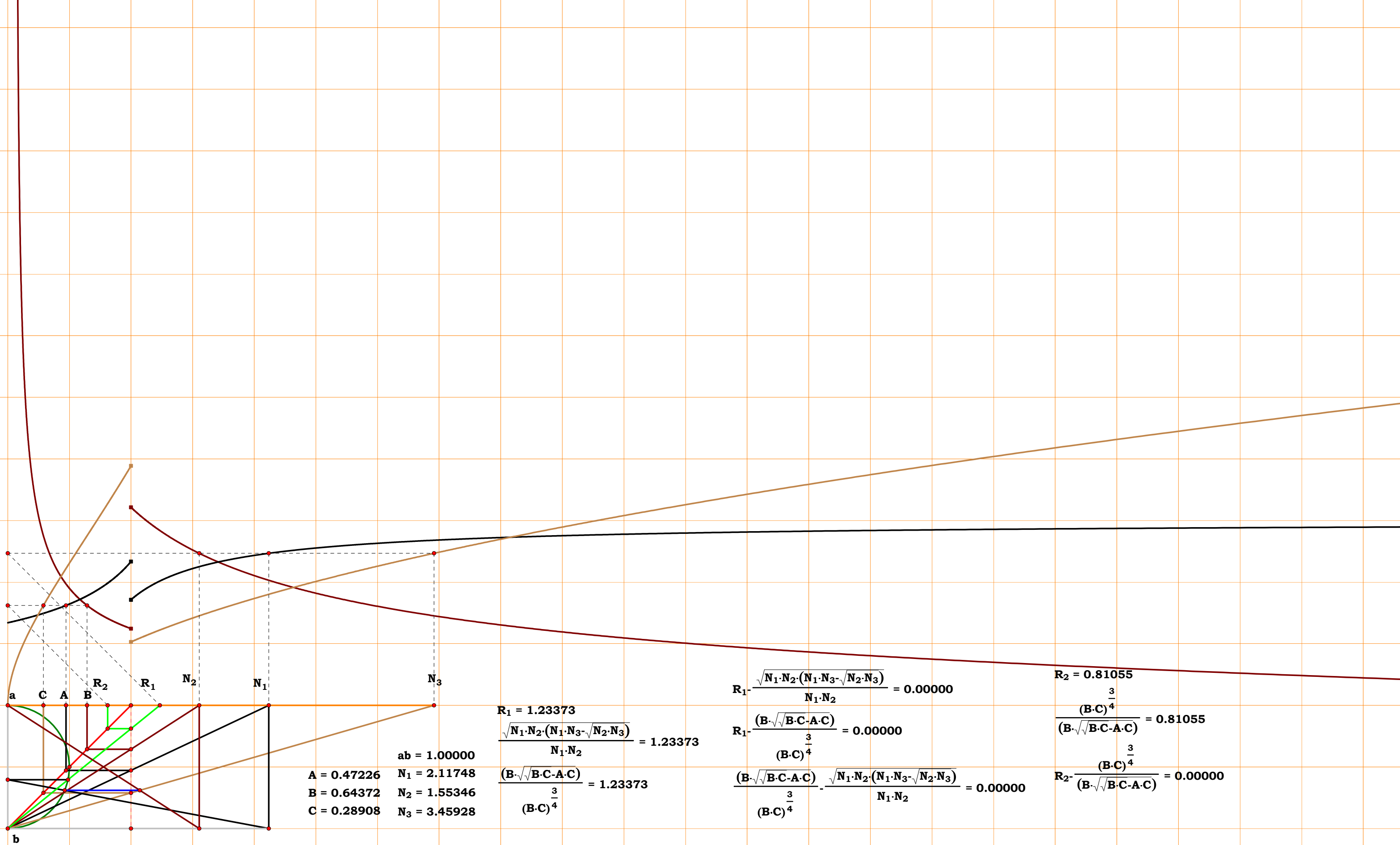
### Definitions.

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{N}_1 \cdot \mathbf{N}_2 \cdot (\mathbf{N}_1 \cdot \mathbf{N}_3 - \sqrt{\mathbf{N}_2 \cdot \mathbf{N}_3})}}{\mathbf{N}_1 \cdot \mathbf{N}_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$\mathbf{R}_1 - \frac{\mathbf{B} \cdot \sqrt{(\sqrt{\mathbf{B} \cdot \mathbf{C}} - \mathbf{A} \cdot \mathbf{C})}}{(\mathbf{B} \cdot \mathbf{C})^{\frac{3}{4}}} = 0 \quad \mathbf{R}_2 - \frac{(\mathbf{B} \cdot \mathbf{C})^{\frac{3}{4}}}{\mathbf{B} \cdot \sqrt{(\sqrt{\mathbf{B} \cdot \mathbf{C}} - \mathbf{A} \cdot \mathbf{C})}} = 0$$







Given.

Unit.  $ab := 1$

$N_1 := 2.20696$      $N_2 := 1.21347$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$      $be := \frac{1}{bN_1}$      $ef := \frac{be}{bN_1}$

$bf := N_1 \cdot ef$      $bc := \frac{ef \cdot N_2}{N_2 - bf}$      $cd := \sqrt{bc \cdot (1 - bc)}$

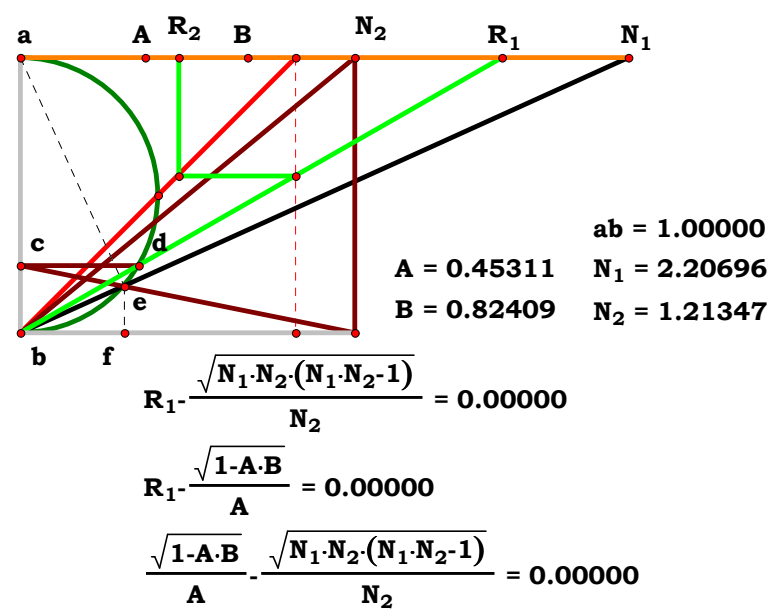
$R_1 := \frac{cd}{bc}$      $R_2 := \frac{1}{R_1}$      $R_1 = 1.746984$

Definitions.

$$R_1 - \frac{\sqrt{N_1 \cdot N_2 \cdot (N_1 \cdot N_2 - 1)}}{N_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0$$

$$R_1 - \frac{\sqrt{1 - A \cdot B}}{A} = 0 \quad R_2 - \frac{A}{\sqrt{1 - A \cdot B}} = 0$$



$$R_1 = 1.74698$$

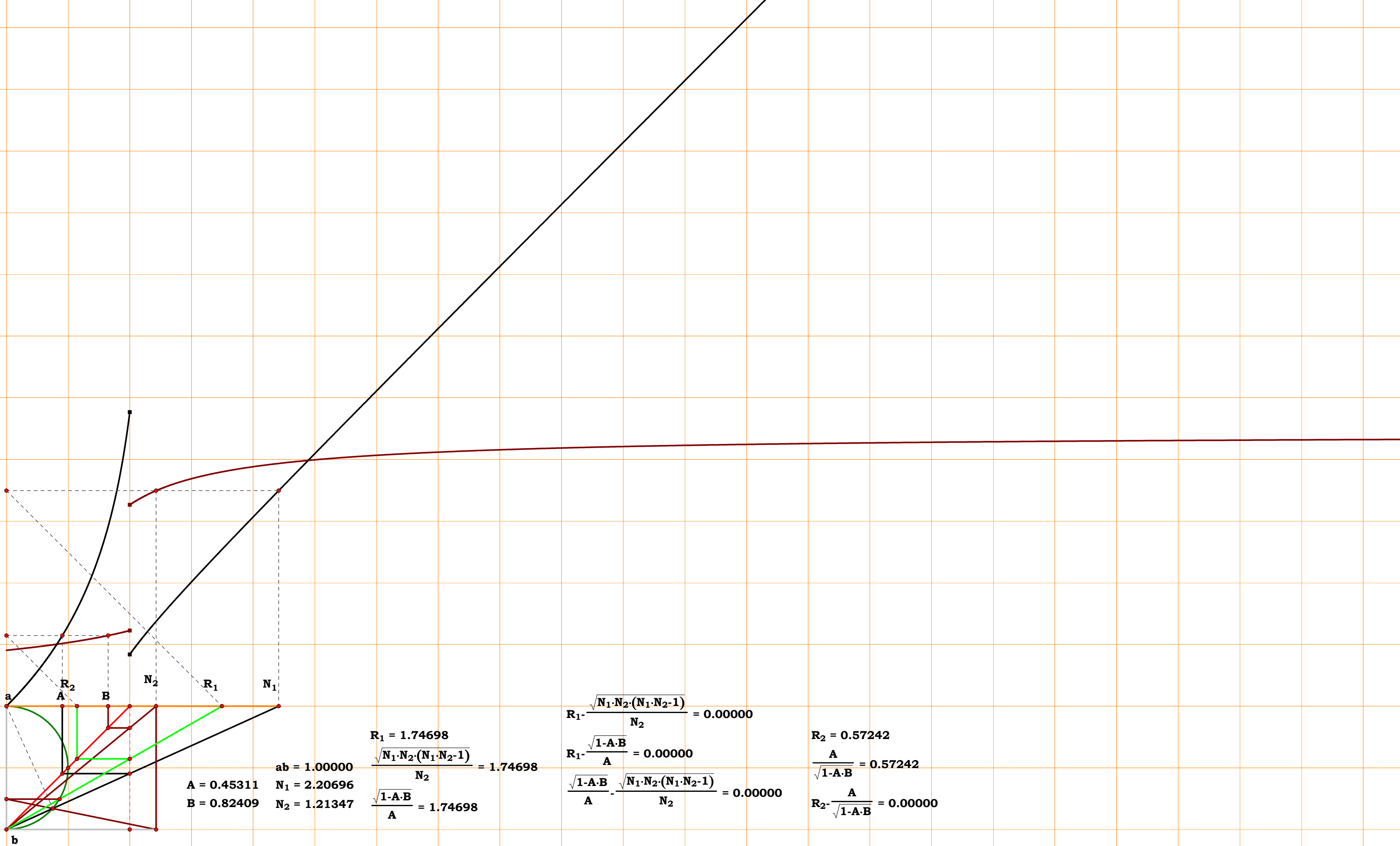
$$\frac{\sqrt{N_1 \cdot N_2 \cdot (N_1 \cdot N_2 - 1)}}{N_2} = 1.74698$$

$$\frac{\sqrt{1 - A \cdot B}}{A} = 1.74698$$

$$R_2 = 0.57242$$

$$\frac{A}{\sqrt{1 - A \cdot B}} = 0.57242$$

$$R_2 - \frac{A}{\sqrt{1 - A \cdot B}} = 0.00000$$





2SMT8R7

Given.

Unit.  $ab := 1$       $N_1 := 2.82592$

$N_2 := 1.50916$       $N_3 := 1.18430$

$A := \frac{1}{N_1}$       $B := \frac{1}{N_2}$       $C := \frac{1}{N_3}$

Descriptions.

$bN_2 := \sqrt{1 + N_2^2}$       $bd := \frac{1}{bN_2}$       $de := \frac{bd}{bN_2}$

$be := N_2 \cdot de$       $bc := \frac{de \cdot N_1}{N_1 - be}$       $cf := N_3 \cdot (1 - bc)$

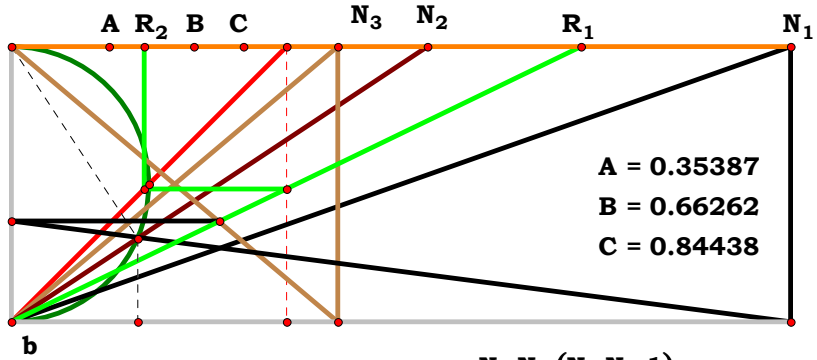
$R_1 := \frac{cf}{bc}$       $R_2 := \frac{1}{R_1}$       $R_1 = 2.064853$

Definitions.

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1 \cdot N_2 - 1)}{N_1} = 0$

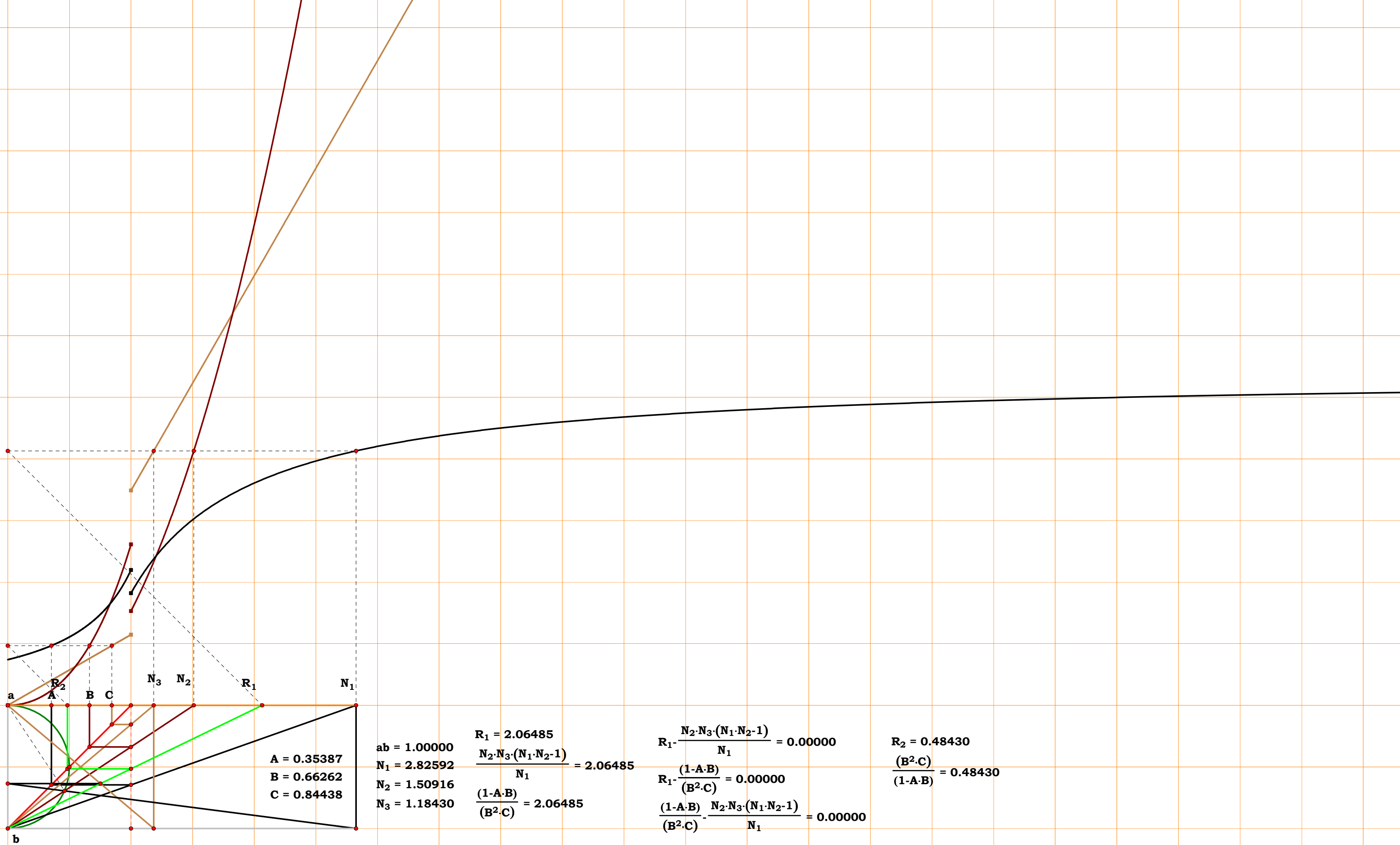
$N_1 - \frac{1}{A} = 0$       $N_2 - \frac{1}{B} = 0$       $N_3 - \frac{1}{C} = 0$

$R_1 - \frac{1 - A \cdot B}{B^2 \cdot C} = 0$       $R_2 - \frac{B^2 \cdot C}{1 - A \cdot B} = 0$



$ab = 1.00000$       $R_1 = 2.06485$   
 $N_1 = 2.82592$       $\frac{N_2 \cdot N_3 \cdot (N_1 \cdot N_2 - 1)}{N_1} = 2.06485$   
 $N_2 = 1.50916$       $\frac{(1 - A \cdot B)}{(B^2 \cdot C)} = 2.06485$   
 $N_3 = 1.18430$

$R_1 - \frac{N_2 \cdot N_3 \cdot (N_1 \cdot N_2 - 1)}{N_1} = 0.00000$       $R_2 = 0.48430$   
 $R_1 - \frac{(1 - A \cdot B)}{(B^2 \cdot C)} = 0.00000$       $\frac{(B^2 \cdot C)}{(1 - A \cdot B)} = 0.48430$   
 $\frac{(1 - A \cdot B)}{(B^2 \cdot C)} - \frac{N_2 \cdot N_3 \cdot (N_1 \cdot N_2 - 1)}{N_1} = 0.00000$





2SMT8R8

Given.

Unit.  $ab := 1$      $N_1 := 1.97415$

$N_2 := 1.32450$      $N_3 := 2.85011$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$

Descriptions.

$bc := \frac{N_3}{N_2 + N_3}$      $bN_1 := \sqrt{1 + N_1^2}$      $bd := \frac{1}{bN_1}$

$de := \frac{bd}{bN_1}$      $be := N_1 \cdot de$      $R_1 := \frac{be \cdot bc}{bc - de}$

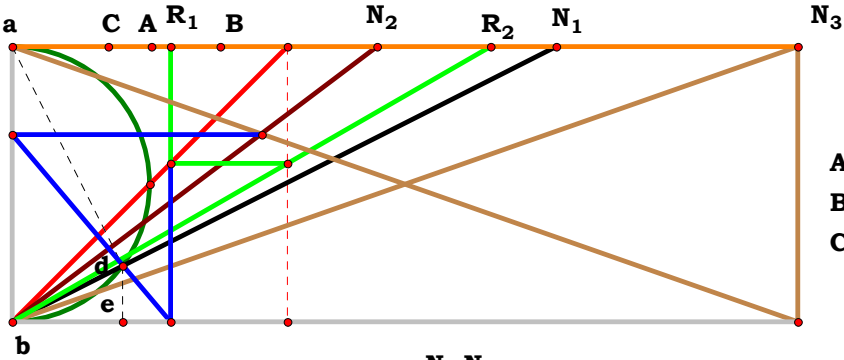
$R_2 := \frac{1}{R_1}$      $R_1 = 0.575126$

Definitions.

$R_1 - \frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0$

$N_1 - \frac{1}{A} = 0$      $N_2 - \frac{1}{B} = 0$      $N_3 - \frac{1}{C} = 0$

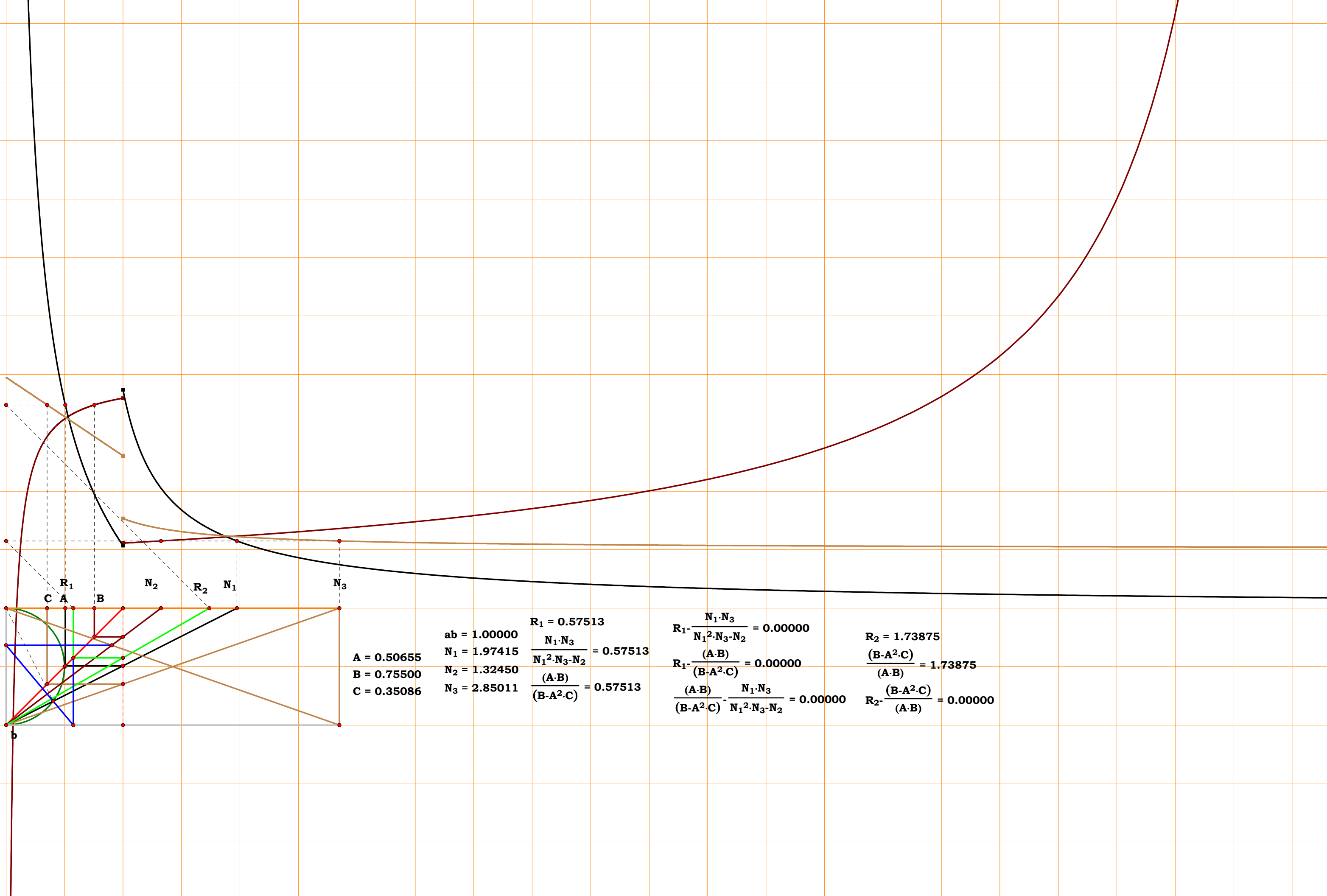
$R_1 - \frac{A \cdot B}{B - A^2 \cdot C} = 0$      $R_2 - \frac{B - A^2 \cdot C}{A \cdot B} = 0$



$A = 0.50655$      $ab = 1.00000$      $R_1 = 0.57513$   
 $B = 0.75500$      $N_1 = 1.97415$      $\frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.57513$   
 $C = 0.35086$      $N_2 = 1.32450$      $\frac{(A \cdot B)}{(B - A^2 \cdot C)} = 0.57513$   
 $N_3 = 2.85011$

$R_1 - \frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.00000$   
 $R_1 - \frac{(A \cdot B)}{(B - A^2 \cdot C)} = 0.00000$   
 $\frac{(A \cdot B)}{(B - A^2 \cdot C)} - \frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.00000$

$R_2 = 1.73875$   
 $\frac{(B - A^2 \cdot C)}{(A \cdot B)} = 1.73875$   
 $R_2 - \frac{(B - A^2 \cdot C)}{(A \cdot B)} = 0.00000$



**A = 0.50655**  
**B = 0.75500**  
**C = 0.35086**

**ab = 1.00000**  
**N<sub>1</sub> = 1.97415**  
**N<sub>2</sub> = 1.32450**  
**N<sub>3</sub> = 2.85011**

**R<sub>1</sub> = 0.57513**  
$$\frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.57513$$
$$\frac{(A \cdot B)}{(B - A^2 \cdot C)} = 0.57513$$

$$R_1 - \frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.00000$$
$$R_1 - \frac{(A \cdot B)}{(B - A^2 \cdot C)} = 0.00000$$
$$\frac{(A \cdot B)}{(B - A^2 \cdot C)} - \frac{N_1 \cdot N_3}{N_1^2 \cdot N_3 - N_2} = 0.00000$$

**R<sub>2</sub> = 1.73875**  
$$\frac{(B - A^2 \cdot C)}{(A \cdot B)} = 1.73875$$
$$R_2 - \frac{(B - A^2 \cdot C)}{(A \cdot B)} = 0.00000$$

**2SMT8R9**

**Unit.**   **ab** := 1      **N<sub>1</sub>** := 1.60800

$$\mathbf{N}_2 := 2.13820 \quad \mathbf{N}_3 := 1.22527$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

$$\mathbf{bN}_1 := \sqrt{\mathbf{1} + \mathbf{N}_1^2} \quad \mathbf{bd} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{de} := \frac{\mathbf{bd}}{\mathbf{bN}_1}$$

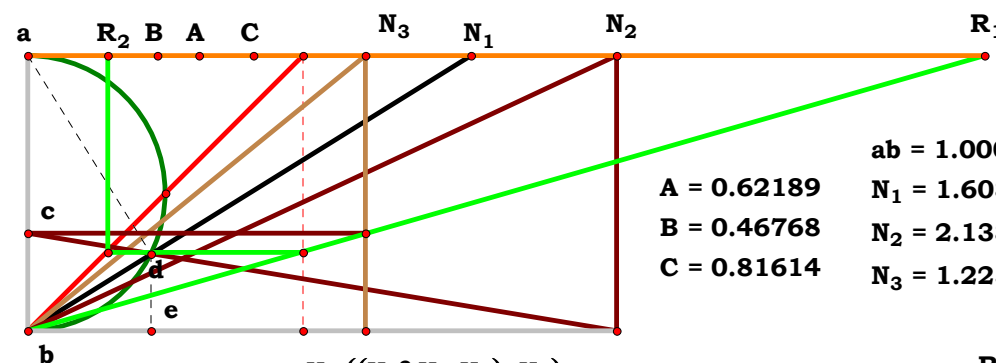
$$\mathbf{be} := \mathbf{N}_1 \cdot \mathbf{de} \quad \mathbf{bc} := \frac{\mathbf{de} \cdot \mathbf{N}_2}{\mathbf{N}_2 - \mathbf{be}} \quad \mathbf{R}_1 := \frac{\mathbf{N}_3}{\mathbf{bc}}$$

$$\mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 3.471961$$

$$R_1 - \frac{N_3 \cdot (N_1^2 \cdot N_2 - N_1 + N_2)}{N_2} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$\mathbf{R}_1 - \frac{(\mathbf{A}^2 - \mathbf{B} \cdot \mathbf{A} + 1)}{\mathbf{A}^2 \cdot \mathbf{C}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A}^2 \cdot \mathbf{C}}{(\mathbf{A}^2 - \mathbf{B} \cdot \mathbf{A} + 1)} = 0$$



**A = 0.62189**  
**B = 0.46768**  
**C = 0.81614**

**ab = 1.00000**  
**N<sub>1</sub> = 1.60800**  
**N<sub>2</sub> = 2.13820**  
**N<sub>3</sub> = 1.22527**

$$R_1 - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 0.00000$$

$$R_1 - \frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} = 0.00000$$

$$\frac{((A^2-A \cdot B)+1)}{(A^2 \cdot C)} - \frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 0.00000$$

$$R_2 = 0.28802$$

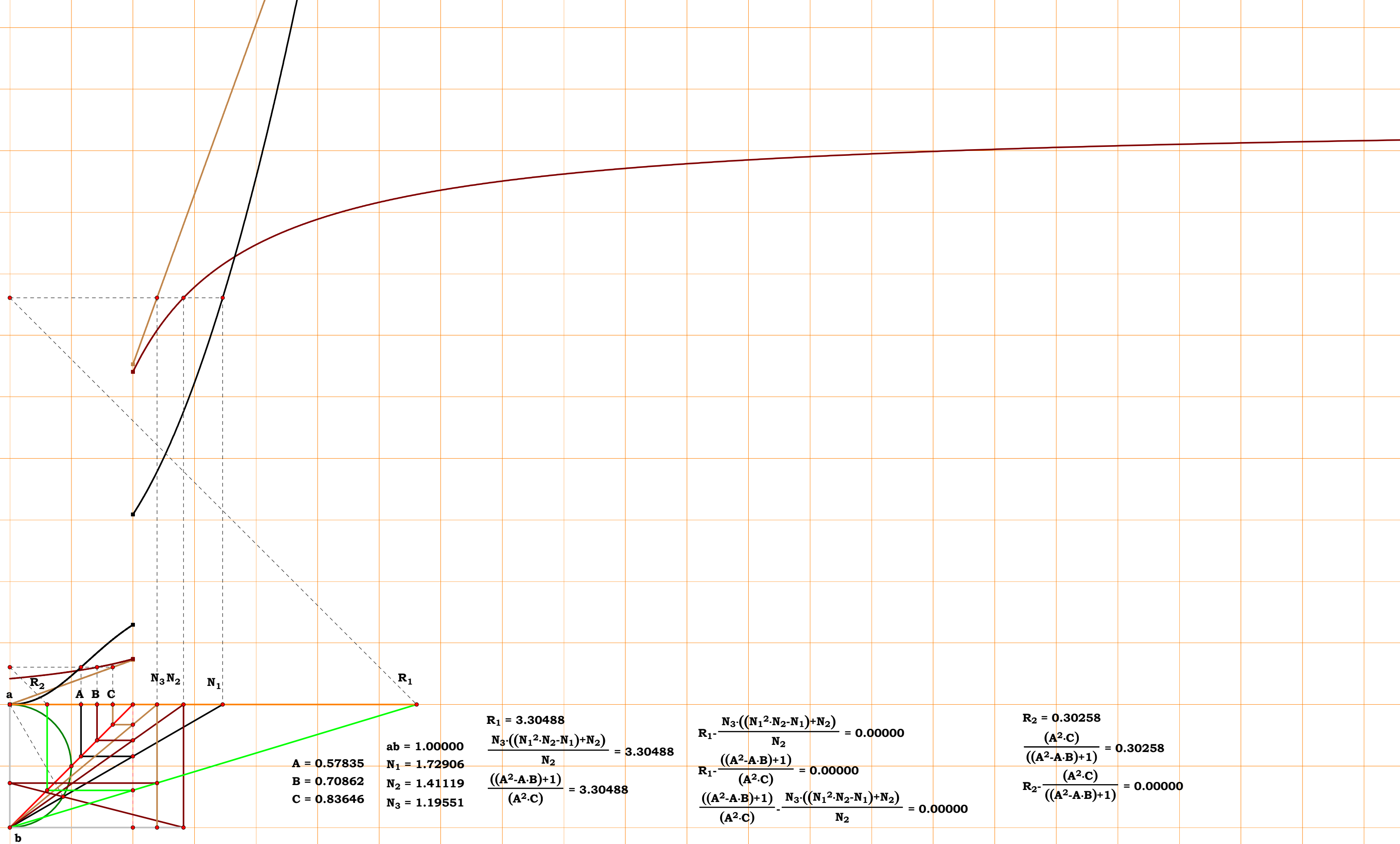
$$\frac{(A^2.C)}{((A^2-A.B)+1)} = 0.28802$$

$$R_2 - \frac{(A^2 \cdot C)}{((A^2 - A \cdot B) + 1)} = 0.00000$$

$$R_1 = 3.47198$$

$$\frac{N_3 \cdot ((N_1^2 \cdot N_2 - N_1) + N_2)}{N_2} = 3.47198$$

$$\frac{((A^2 - A \cdot B) + 1)}{(A^2 \cdot C)} = 3.47198$$



**2SMT8R10**

**Unit.**   **ab** := 1     **N<sub>1</sub>** := 2.53265

$$\mathbf{N}_2 := 2.04839 \quad \mathbf{N}_3 := 3.32978$$

$$\mathbf{A} := \frac{1}{N_1} \quad \mathbf{B} := \frac{1}{N_2} \quad \mathbf{C} := \frac{1}{N_3}$$

### Descriptions.

$$\mathbf{bN}_1 := \sqrt{1 + \mathbf{N}_1^2} \quad \mathbf{be} := \frac{1}{\mathbf{bN}_1} \quad \mathbf{ef} := \frac{\mathbf{be}}{\mathbf{bN}_1}$$

$$\mathbf{bh} := \mathbf{N}_2 \cdot (1 - \mathbf{ef}) \quad \mathbf{bc} := \frac{\mathbf{ef} \cdot \mathbf{N}_3}{\mathbf{N}_3 - \mathbf{bh}} \quad \mathbf{cd} := \sqrt{\mathbf{bc} \cdot (1 - \mathbf{bc})}$$

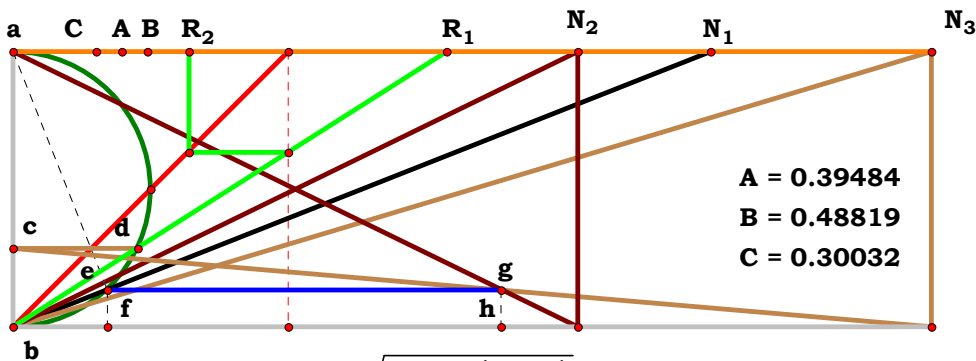
$$\mathbf{R}_1 := \frac{\mathbf{cd}}{\mathbf{bc}} \quad \mathbf{R}_2 := \frac{1}{\mathbf{R}_1} \quad \mathbf{R}_1 = 1.571115$$

### Definitions.

$$R_1 - \frac{\sqrt{N_1^2 \cdot N_3 \cdot (N_3 - N_2)}}{N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0$$

$$\mathbf{R}_1 - \frac{\sqrt{\mathbf{B}-\mathbf{C}}}{\mathbf{A} \cdot \sqrt{\mathbf{B}}} = 0 \quad \mathbf{R}_2 - \frac{\mathbf{A} \cdot \sqrt{\mathbf{B}}}{\sqrt{\mathbf{B}-\mathbf{C}}} = 0$$



$$R_1 - \frac{\sqrt{N_1^2 \cdot N_3 \cdot (N_3 - N_2)}}{N_3} = 0.00000$$

$$R_1 - \frac{\sqrt{B-C}}{(A \cdot \sqrt{B})} = 0.00000$$

$$\frac{\sqrt{\mathbf{B} \cdot \mathbf{C}}}{(\mathbf{A} \cdot \sqrt{\mathbf{B}})} - \frac{\sqrt{\mathbf{N}_1^2 \cdot \mathbf{N}_3 \cdot (\mathbf{N}_3 - \mathbf{N}_2)}}{\mathbf{N}_3} = 0.00000$$

**ab = 1.00000**

$$N_1 = 2.53265$$

$$N_2 = 2.04839$$

$$N_3 = 3.32978$$

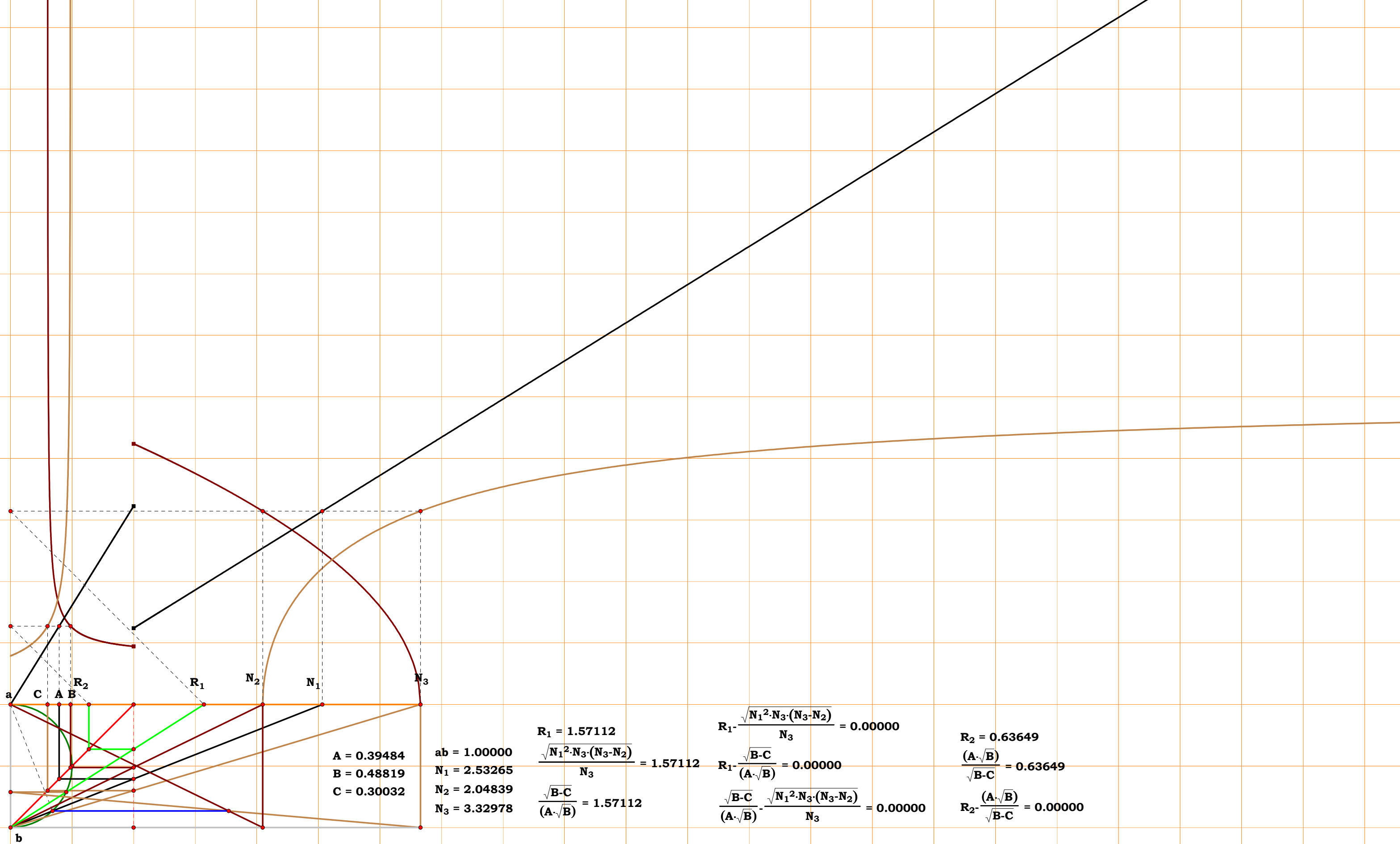
$$\frac{R_1 = 1.57112}{\frac{\sqrt{N_1^2 \cdot N_3 \cdot (N_3 - N_2)}}{N_3}} = 1.57112$$

$$\frac{\sqrt{\mathbf{B-C}}}{(\mathbf{A \cdot \sqrt{B}})} = 1.57112$$

$$R_2 = 0.63649$$

$$\frac{(A \cdot \sqrt{B})}{\sqrt{B-C}} = 0.63649$$

$$R_2 - \frac{(A \cdot \sqrt{B})}{\sqrt{B-C}} = 0.00000$$





2SMT8R11

Given.

Unit.  $ab := 1$

$N_1 := 1.46157$      $N_2 := 1.28118$

$N_3 := 1.95836$      $N_4 := 3.18804$

$A := \frac{1}{N_1}$      $B := \frac{1}{N_2}$      $C := \frac{1}{N_3}$      $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$      $bd := \frac{1}{bN_1}$      $de := \frac{bd}{bN_1}$

$BE := N_1 \cdot de$      $bg := N_2 \cdot (1 - de)$      $bc := \frac{de \cdot N_3}{N_3 - bg}$

$ch := N_4 \cdot (1 - bc)$      $R_1 := \frac{ch}{bc}$      $R_2 := \frac{1}{R_1}$

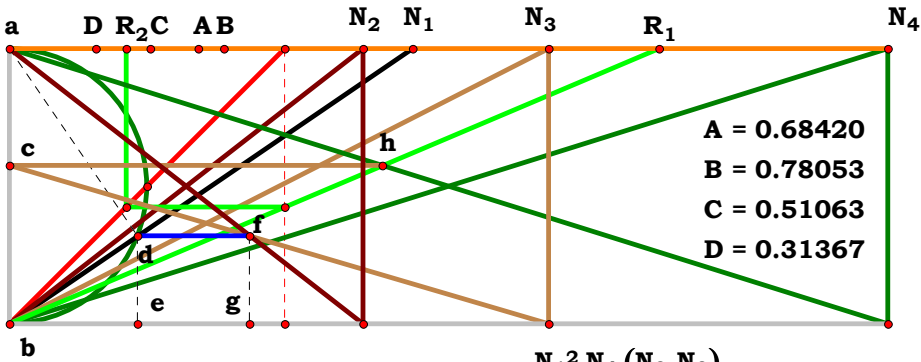
$R_1 = 2.354912$

Definitions.

$$R_1 - \frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{(B - C)}{A^2 \cdot B \cdot D} = 0 \quad R_2 - \frac{A^2 \cdot B \cdot D}{B} = 0.277807$$



$$R_1 - \frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 0.00000$$

$$R_1 - \frac{(B - C)}{(A^2 \cdot B \cdot D)} = 0.00000$$

$$\frac{(B - C)}{(A^2 \cdot B \cdot D)} - \frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 0.00000$$

$ab = 1.00000$   
 $N_1 = 1.46157$   
 $N_2 = 1.28118$   
 $N_3 = 1.95836$   
 $N_4 = 3.18804$

$$R_1 = 2.35490$$

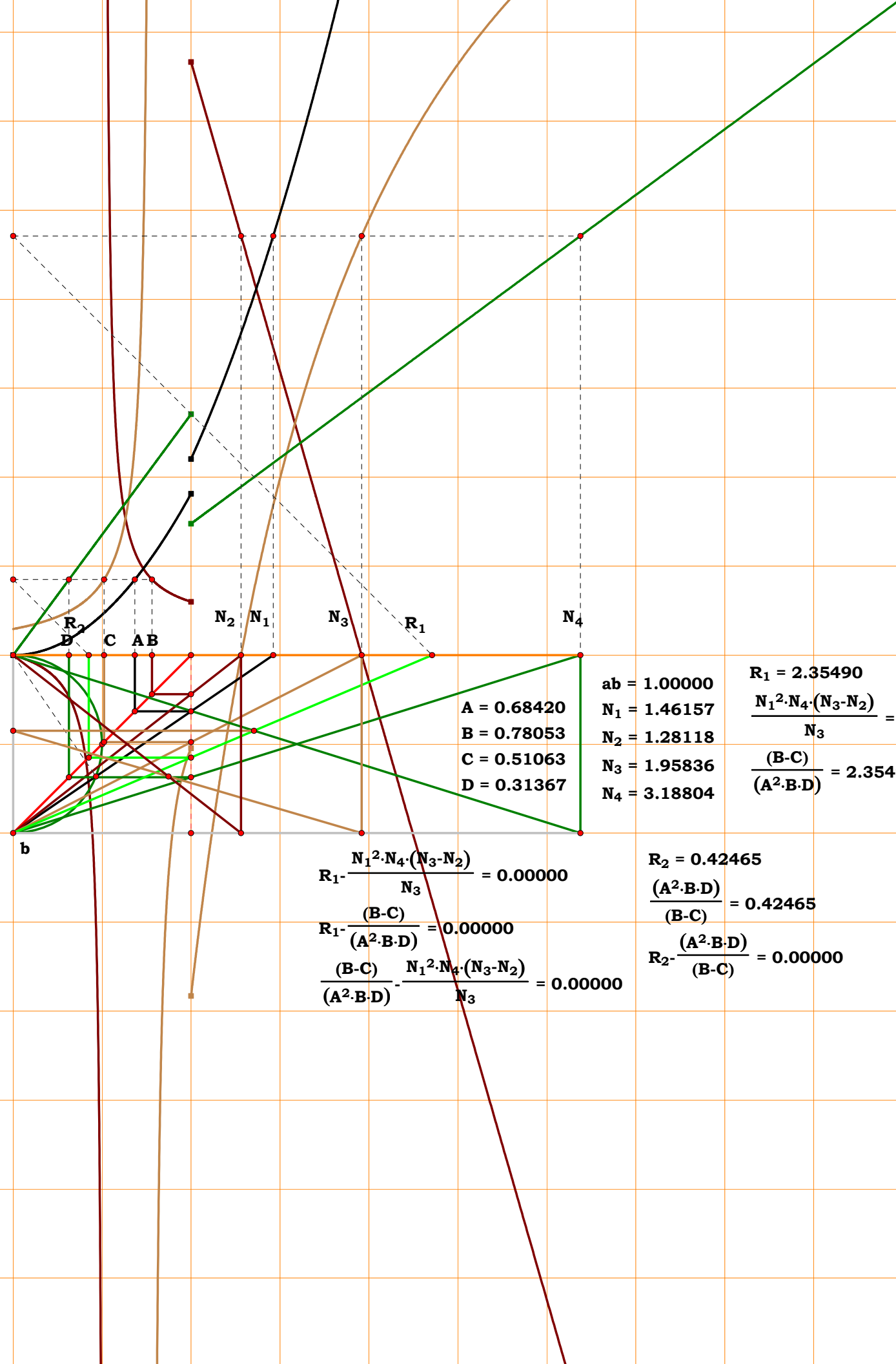
$$\frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 2.35490$$

$$\frac{(B - C)}{(A^2 \cdot B \cdot D)} = 2.35490$$

$R_2 = 0.42465$

$$\frac{(A^2 \cdot B \cdot D)}{(B - C)} = 0.42465$$

$$R_2 - \frac{(A^2 \cdot B \cdot D)}{(B - C)} = 0.00000$$



$ab = 1.00000$   
 $N_1 = 1.46157$   
 $N_2 = 1.28118$   
 $N_3 = 1.95836$   
 $N_4 = 3.18804$

$A = 0.68420$   
 $B = 0.78053$   
 $C = 0.51063$   
 $D = 0.31367$

$R_1 = 2.35490$   
$$\frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 2.35490$$
  
$$\frac{(B - C)}{(A^2 \cdot B \cdot D)} = 2.35490$$

$$R_1 - \frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 0.00000$$
  
$$R_1 - \frac{(B - C)}{(A^2 \cdot B \cdot D)} = 0.00000$$
  
$$\frac{(B - C)}{(A^2 \cdot B \cdot D)} - \frac{N_1^2 \cdot N_4 \cdot (N_3 - N_2)}{N_3} = 0.00000$$

$R_2 = 0.42465$   
$$\frac{(A^2 \cdot B \cdot D)}{(B - C)} = 0.42465$$
  
$$R_2 - \frac{(A^2 \cdot B \cdot D)}{(B - C)} = 0.00000$$



2SMT8R12

Given.

Unit.  $ab := 1$

$N_1 := 1.77632$   $N_2 := 2.37270$

$N_3 := 3.38824$   $N_4 := 1.47534$

$A := \frac{1}{N_1}$   $B := \frac{1}{N_2}$   $C := \frac{1}{N_3}$   $D := \frac{1}{N_4}$

Descriptions.

$bN_1 := \sqrt{1 + N_1^2}$   $be := \frac{1}{bN_1}$   $bd := \frac{be}{bN_1}$

$bh := N_2 \cdot (1 - bd)$   $bc := \frac{bd \cdot N_3}{N_3 - bh}$

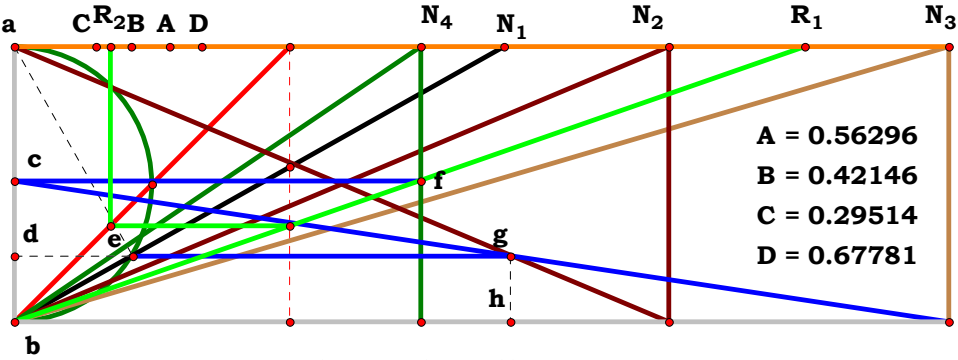
$R_1 := \frac{N_4}{bc}$   $R_2 := \frac{1}{R_1}$   $R_1 = 2.870607$

Definitions.

$$R_1 - \frac{N_4 \cdot [N_3 - N_1^2 \cdot (N_2 - N_3)]}{N_3} = 0$$

$$N_1 - \frac{1}{A} = 0 \quad N_2 - \frac{1}{B} = 0 \quad N_3 - \frac{1}{C} = 0 \quad N_4 - \frac{1}{D} = 0$$

$$R_1 - \frac{(B - C) + A^2 \cdot B}{A^2 \cdot B \cdot D} = 0 \quad R_2 - \frac{A^2 \cdot B \cdot D}{(B - C) + A^2 \cdot B} = 0$$



$$R_1 - \frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 0.000000$$

$$R_1 - \frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} = 0.000000$$

$$\frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} - \frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 0.000000$$

$ab = 1.00000$

$N_1 = 1.77632$

$N_2 = 2.37270$

$N_3 = 3.38824$

$N_4 = 1.47534$

$A = 0.56296$

$B = 0.42146$

$C = 0.29514$

$D = 0.67781$

$R_1 = 2.87062$

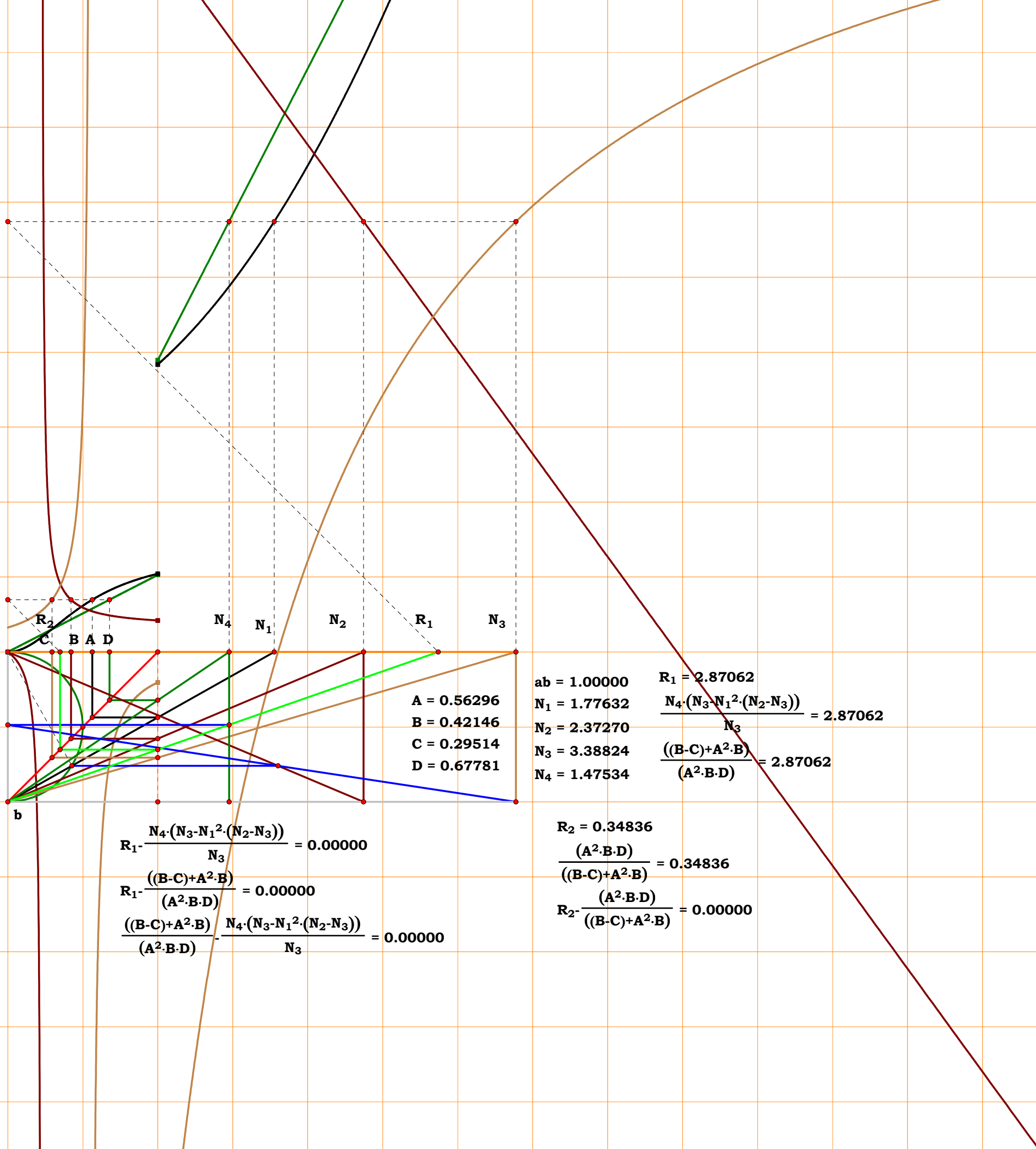
$$\frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 2.87062$$

$$\frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} = 2.87062$$

$R_2 = 0.34836$

$$\frac{(A^2 \cdot B \cdot D)}{((B - C) + A^2 \cdot B)} = 0.34836$$

$$R_2 - \frac{(A^2 \cdot B \cdot D)}{((B - C) + A^2 \cdot B)} = 0.000000$$



**A = 0.56296**  
**B = 0.42146**  
**C = 0.29514**  
**D = 0.67781**

**ab = 1.00000**  
**N<sub>1</sub> = 1.77632**  
**N<sub>2</sub> = 2.37270**  
**N<sub>3</sub> = 3.38824**  
**N<sub>4</sub> = 1.47534**

$$R_1 = 2.87062$$

$$\frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 2.87062$$

$$\frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} = 2.87062$$

$$R_1 - \frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 0.00000$$

$$R_1 - \frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} = 0.00000$$

$$\frac{((B - C) + A^2 \cdot B)}{(A^2 \cdot B \cdot D)} - \frac{N_4 \cdot (N_3 - N_1^2 \cdot (N_2 - N_3))}{N_3} = 0.00000$$

$$R_2 = 0.34836$$

$$\frac{(A^2 \cdot B \cdot D)}{((B - C) + A^2 \cdot B)} = 0.34836$$

$$R_2 - \frac{(A^2 \cdot B \cdot D)}{((B - C) + A^2 \cdot B)} = 0.00000$$